
PART II.

RESOURCES AND INDUSTRIES.

CHAPTER XIII.

THE FURS OF ALASKA.

Of the various industries of Alaska, the fur trade is the one that may be discussed in the most satisfactory manner, because we have authentic records of shipments, prices, and the old *modus operandi* of this peculiar business reaching back to the beginning of the present, and, in part, even to the middle of the last century. At the Siberian ports of Okhotsk, Bolsheretsk, and Petropavlovsk regular and generally reliable registers were kept of all furs arriving from the east by sea, including the islands as well as the coast of the American continent. The figures obtained from these records may safely be considered below, rather than above, the actual numbers, because, as the Russian government exacted a tithe or other percentage from all such shipments, it was quite natural that some of the traders should have endeavored to smuggle through as much of their catch as possible without reporting it. But even at this late day it is possible to apply a check to these totals of importation of furs from the region now called Alaska by comparing the same with equally authentic figures of transactions in furs and teas of the Chinese frontier, and at Irkutsk, the center of trade of all Siberia.

Of the large quantity of furs, principally sea otter, that found their way to Europe or China directly in the vessels of American and British northwest traders during the end of the eighteenth and beginning of the nineteenth century, we have full statements contained in the published journals of these vessels.

Only two instances of shipments of furs from the Alaskan coast to France are known, one the famous expedition under the command of La Perouse, which skirted this coast in the year 1788; the other a trading venture by merchants of Marseilles, who sent out a ship under the command of Captain Roquefeuille, in the year 1818. This French captain, who had sailed with the most sanguine expectations of opening to the venturesome traders of his native seaport a new field of enterprise, and of ultimately establishing a traffic to rival that of the famous East India Company, was doomed to disappointment. The poor quality of the goods was one of the causes of his failure among Indians who had for many years reaped the benefits of fierce competition between English, American, and Russian traders. We have the testimony of his own narrative that he looked upon the inferior grade of woollen goods with which he had been provided in France as the cause of his ill success. He boasted of the superior quality of French muskets; but, as he confesses to having paid as much as 2 muskets and 12 pounds of powder for a single sea-otter skin, it seems that he profited but little by the superiority of his one article of trade.

After a summer's cruise among the islands of the Alexander archipelago, Roquefeuille came to the conclusion that his expedition would prove a total failure unless he followed the example of the "Bostonian" northwest traders, in organizing a hunting expedition on joint account with Baranof, then chief manager of the Russian colonies. In this venture also he met with misfortunes; being supplied with Aleutian hunters in their canoes, he was compelled to sign an agreement to pay the sum of 200 Mexican dollars for any native who should lose his life while in his employ by drowning or at the hands of hostile aborigines. In the course of this expedition 26 Aleutian hunters were killed by the Haidas, a Thlingit tribe living on Prince of Wales island, and, as the number of sea otters secured did not exceed 200, Roquefeuille left the shores of Alaska somewhat disappointed, reporting on his arrival at Marseilles that there was no field for French enterprise on the northwest coast of America.

The English and American explorers and traders (they always managed to combine the two functions) continued for many years to hunt sea otters in partnership with the Russian American Company, being furnished by Baranof and his successors with Aleutian hunters and canoes. Their operations, however, were chiefly carried on along the coast of what was then called New Albion, and of California, and the results of these ventures do not fall within the scope of this report.

The English and American sea captains who visited Prince William sound and the Alexander archipelago previous to Vancouver's voyages reaped a most abundant harvest of sea otters in that section of the country, as many as 2,000 skins having been secured by a single vessel in one season. At the beginning of the present century Alexander Baranof, who had the best facilities for observation, estimated that 120,000 sea otters were carried away by "the foreigners", mostly to China.

The prices of this valuable skin, even at that early day, were remarkably high. In the journals and reports of these traders, which have nearly all been preserved, we find instances of 10 or 12 blankets, and even \$40 in silver, paid for a single skin. The Russians, who were compelled to transport all their trading goods across the width of the Asiatic continent and then by ships from Okhotsk, were not slow to discover that it was impossible to compete in trade with these English and American rivals. The valuable animal was rapidly becoming extinct in the more accessible hunting grounds when Baranof concluded to extend the original policy of his company, of hunting in preference to trading, to the sea-otter grounds of the southeast. He summoned large numbers of natives of the Aleutian islands and of the Kadiak group, with their canoes, and ordered them to proceed to the then newly established settlement at Sitka, hunting as they made their way eastward. Parties composed of from 600 to 800 canoes set out on this perilous journey of over 1,000 miles of stormy ocean, following the line of the coast. One-third of these fleets was lost on the way.

Although these expeditions were accompanied by small sailing crafts to carry supplies, it frequently happened that the natives in their canoes were surprised by violent gales in crossing the open sea from one promontory to another. Many also suffered death at the hands of the more warlike and hostile Thlingits inhabiting the mainland between the Copper river and Cape Spencer. Those who finally reached their destination were divided into smaller parties and sent out to scour the intricate inlets, fiords, and channels of the Alexander archipelago and the mainland to the eastward. Of these smaller expeditions also a large percentage never returned to report their success or their losses.

When hunting in the southeastern region proved no longer profitable the Russian American Company continued to purchase of the Thlingits a few sea otters killed by them, but owing to the close vicinity of several of the Hudson Bay Company's stations, the prices paid for such skins were abnormally high. The Aleutian and Kadiak Eskimo natives who were compelled to hunt for the company under the provisions of its charter received but the equivalent of \$10 for the very best grade of sea otter, while the independent Thlingits sold the same quality of skin for \$30 or \$40 in silver at Sitka. The managers of the Russian company in their reports acknowledged that no profits were derived from these transactions, but that the skins were purchased only to prevent their acquisition by the Hudson Bay Company.

In the waters surrounding the Aleutian islands the killing of sea otters was brought into system and order as soon as the Russian American Company obtained control of the country by their charter of 1799. At first the company claimed the right to employ all native men as hunters without any compensation beyond their subsistence as an "offset from their exemption from imperial taxes and other duties". This profitable but unjust procedure was forbidden by the emperor Alexander I, and the company was instructed to pay the Aleutian hunters for every skin deposited in the company's storehouses. The emperor's manifesto was complied with, but the prices paid to the poor Aleutians for their sea-otter skins were ridiculously small. Only 10 rubles of colonial scrip or leather currency, the equivalent of about \$2, was paid to the hunter for a first-class skin. He was also required to furnish his own subsistence, with the exception of a few articles of luxury, a very small quantity of flour and tobacco.

The Russian Company, even in those early days, realized \$100 each for their sea-otter skins in the markets of Asia and Europe.

When the Siberian hunters and traders first advanced from the coast of Asia along the Aleutian chain of islands, the expeditions, fitted out mostly by wealthy merchants of Irkutsk, and consisting of 1 or 2 small vessels each, were generally absent from 5 to 7 years, and at the end of that time returned with from 2,000 to 7,000 sea-otter skins, in addition to the less valuable skins of foxes of various kinds. Their primitive crafts were of such wretched construction (being in many instances built almost without the use of iron, with planks lashed together with rawhide thongs) that fully 50 per cent of these valuable cargoes were lost by shipwreck.

In spite of these losses, however, the value of sea-otter and fur-seal skins imported through the port of Okhotsk alone was estimated at the end of the eighteenth century at nearly 2,000,000 rubles (in silver) per annum, of which the imperial government exacted one-tenth as royalty from the hunters. Under the indiscriminate slaughter of many rival hunting expeditions the sea otters disappeared rapidly, so that when the Russian American Company at last obtained exclusive control of the whole industry the annual catch of sea otters did not exceed 2,500 skins for nearly half a century succeeding the first charter. At no time during the existence of this company was the annual sea-otter catch officially reported as exceeding 2,000 skins. The policy adopted by the Russian company was to hunt thoroughly over a certain sea-otter ground for two successive seasons and then to let it remain undisturbed for 3 years following. But even under such careful management the total catch did not increase at any time to the figure attained subsequent to the transfer of the country to the United States. The waters surrounding certain islands and their outlying reefs were more prolific then in the valuable animals than they are now, but the total yield of sea-otter skins in Alaska from the time of its purchase to within a few years was four times as large as any reported by the Russians.

It is true in the records of the customhouse at Okhotsk we find such entries as the following: "The ships of the promyshleniks (Siberian term for hunters) discharged at the customhouse in the year of 1770 16,000 sea otters, 23,000 sables, 2,400 black foxes, 14,000 red foxes, 25,000 fur seals, 36,000 blue foxes, valued at 2,000,000 rubles in silver. The value of the goods exported by these traders on setting out upon their expeditions was

200,000 rubles"; but we must consider that the entries for that 1 year may show the result of the transactions of several ships during 4 or 5 years.

In an official report laid before the emperor by the imperial chamberlain, Rezanof, who visited the Russian colonies in America between the years 1805 and 1807, the value of sea-otter skins exported annually was estimated only at 80,000 rubles. Lieutenant Kotzebue, who visited the northwest coast of America during his voyage around the world from 1815 to 1817, reported the value of the sea-otter catch as from 100,000 to 150,000 rubles. That both these estimates were far below the reality has since been ascertained, but it is safe to state that from the time of Kotzebue's visit until the transfer of Alaska to the United States from 2,000 to 3,000 sea-otter skins were placed upon the market each successive year, and also that to these shipments and to the catch of fur seal was due the continued maintenance of the Russian establishments on this continent.

The tables appended to this chapter show clearly that the shipments of sea-otter skins increased very largely in price after the transfer of the Russian colonies to the United States. An official statement, published in 1863, of shipments of sea otter from Sitka during the period of 20 years preceding, places the aggregate at 29,899, showing an annual average production of 1,295. In 1880 the catch approached 6,000, but from that time it has steadily dwindled until now only from 1,500 to 2,000 of these valuable skins reach the market every year.

The remarkable increase in the catch in our time was due solely to the increased inducements offered to the natives for exerting themselves to the utmost in order to satisfy new wants growing upon them every year. The animal certainly must have been more numerous in former times, but in those days whenever a large body of these shy animals moved from one feeding ground to another no effort was made to trace and follow them up, as is done now. For between 15 and 20 years succeeding the purchase of Alaska no decrease was perceptible; occasionally a considerable increase in the shipments of sea-otter skins was reported, but now the turning point seems to have been passed, and in due course of time, perhaps in a very few years, the inevitable collapse must come. In fact the black cloud of prospective ruin and starvation is even now within the poor Aleut's limited scope of vision.

Within the last 10 years the hunting of sea otters by means of small sailing craft provided with boats and crews of white men has increased in volume from year to year. This mode of hunting is carried on in both summer and winter, giving the animals almost no chance to recuperate. In many of the most prolific hunting grounds the sea otter has already become extinct. Trading stations located at various points of the mainland and islands, from which formerly several hundred of the valuable pelts were shipped every year, now report from 4 to 10 skins. During the last year one firm sent out schooners provided with steam launches to chase the much-coveted animal, and therefore the final extermination of the species can not be far distant.

The sea otter is an exceedingly shy and sensitive animal, and does not appear to congregate in any large numbers. It rarely sets foot upon shore, unless it be for a few hours of repose upon some outlying rock or sand dune, and probably during the breeding season in some secluded retreat. It is frequently found 60 and 80 miles from land, singly and in pairs, and even families with their young may be seen drifting about at that distance from shore. Patches of floating kelp are their favorite places for resting, and in still water the female can be seen floating on her back, holding her offspring between the forefeet. Some hunters with well-developed sense of hearing, or very vivid imagination, assert that the animal gives forth a crooning sound, or lullaby, hushing the baby, as it were. A few instances are on record of sea otters having come ashore on the coast of Cook inlet, driven from the water by ice during extremely cold winters.

The mode of hunting the animal did not essentially change among the natives from the earliest times until within a few years past. The universal use of firearms in killing sea otters is of comparatively recent origin, and even now a large proportion of the native hunters prefer the spear and the bow and arrows for the purpose, and there can be no doubt that the noise of firearms, as well as the constant pursuit, contributed to the driving away and scattering of the shy animals. The natives always hunted the sea otter in parties of from 4 to 7 canoes, each manned by 2 hunters. Of late years it has been the practice of the firms trading in Alaska to assemble many such parties, numbering from 40 to 60 canoes, and to carry them on sailing or steam vessels to the more distant hunting grounds. Upon landing, these parties pitch their tents in locations not visible from the sea, and the hunters, who are generally accompanied by a few women to do the camp work, settle down in patience for the first favorable day, as only a smooth sea and clear weather permit of pursuing the sea otter with canoes with any prospect of success. In the inhospitable climate of Alaska weeks and months may sometimes pass by without giving the patient hunters a chance to try their skill. A weatherwise individual, here known under the Russian name of "Astronome", generally accompanies each party to give out notice of the approach of favorable weather, and to fix the exact time when it is best to set off. But few natives, even in the present day, are bold enough to begin a hunt without the sanction of such an individual. When the right day arrives at last, the hunters, who all belong to the Russian church, embark after a brief prayer for success, fully equipped and in the best of spirits, exchanging jokes and banter until the beach is left far behind. Then silence becomes the rule, a chosen leader assumes command, and at a signal from him the canoes form a semicircle, with intervals of from 50 to 100 yards between them. Each hunter anxiously scans the surface of the water, while at the same time keeping an eye upon the other canoes. The sea otter comes up to the surface to breathe about once in every 10 minutes, its small, smooth, glossy head remaining visible but a few seconds each time.

The first hunter who spies an otter lifts his paddle as a signal, and then points it in the direction taken by the animal in diving. The scattered canoes at once close in a wide circle around the spot indicated by the fortunate discoverer. If the animal comes up within this circle the hunters merely continue to close in gradually, beating the water with their paddles to prevent the escape of the quarry; but very often the wary animal changes its course after diving, and the whole fleet of canoes is obliged to change direction frequently before the final circle is formed. As soon as the otter comes up within range of spear or arrow, the nearest hunter exerts his skill, and lodges a spearhead in the head or neck of the animal, which immediately dives. The shaft of the spear or arrow, to which an inflated bladder is fastened, becomes detached from the point, but still connected by a line, and serves as a buoy, preventing the otter from diving to any depth. The animal soon comes up again, only to receive additional missiles. The intervals between diving become shorter each time, until exhaustion forces the otter to remain on the surface and receive its death wound. The body of the animal is then hoisted on the top of one of the canoes and the hunt continues as long as the weather is favorable. On returning to camp each animal killed is inspected by the leader of the party, in the presence of all the hunters, and its ownership ascertained by the spear or arrowhead that caused the mortal wound, each weapon bearing its owner's mark. The man who first struck the otter receives from \$2 to \$10 from the one who finally slays it. The skins of the animals are at once removed, labeled, and classified, according to quality, by the agents of the trading firm accompanying the hunting parties, and carefully stored for shipment. The hunters do not receive their pay until the return of the whole party to the trading post.

These primitive and conservative processes are, however, rapidly becoming a thing of the past. Even the native hunter neglects his bow and spear, relying chiefly upon his breech-loading rifle or shotgun. Though the white sea-otter hunters still take native parties with them to the hunting grounds, they arm themselves with guns exclusively, and, with their stanch little schooners, they can keep up the pursuit of the otter far into the winter, giving the animal no time to recuperate. The greatest damage to the sea-otter interest is inflicted by the wealthy trading firms who for several years have sent their well-fitted schooners to the otter grounds provided with steam launches and all the latest inventions for the destruction of marine animal life. The puffing and churning of these miniature steam craft can now be heard on the waters of all the most valuable hunting grounds, sounding the death knell of the highly prized mammals, the skins of which heretofore furnished the native hunter with necessities, as well as the simple luxuries, essential to his domestic economy. The day is rapidly approaching when an answer will be demanded to the question as to what may be done to repair his loss. Unless a stop is put to the hunting by steam, the sea-otter fur will be exceedingly rare and correspondingly costly before another decade passes by.

FUR SEALS.

At an early day in the history of the Russian colonies in America transactions in the skins of fur seals began to rival in magnitude the trade in sea-otter skins. During the year immediately succeeding the discovery of the Pribilof group, in 1786, over 500,000 fur seals were killed by the Russian hunters. Veniaminof, the most prominent missionary of Alaska, in his descriptive letters, which were published and obtained wide circulation, gives these figures at 2,000,000. Whether this was an exaggeration or not it is impossible now to say, but it appears from official reports that within 20 years from that time the fur seals had almost disappeared from the islands.

Fully one-half of the skins taken on the Pribilof islands during that period were thrown into the sea in an advanced state of decomposition, poisoning the waters for miles around to such an extent as to drive away the seals for several successive seasons. Soon after the first seal pelts had been placed upon the Siberian market it was ascertained that the Chinese merchants trading on the frontier placed a high value upon these skins. They frequently refused to exchange teas for any other commodity of which the Russian traders could dispose. When the Russian American Company finally obtained exclusive control of the Russian possessions in America the fur seals were so nearly extinct that at first the new company's traffic in their skins was quite insignificant.

The imperial chamberlain, Nicolai Rezanof, previously mentioned, was the first to observe the threatened extinction of this lucrative industry. He promptly applied the most efficient remedies by at once prohibiting the killing of any more fur seals for a period of 5 years succeeding his visit in the year 1807. At the end of that time the shy animals had returned and recuperated sufficiently to afford a regular and reliable source of revenue to the Russian American Company.

On the Pribilof islands, as well as in other portions of the Russian colonial possessions over which the company had exclusive control, the natives were paid for each skin secured. The price was, however, out of all proportion to the real value of the article. From 20 to 30 cents each was all the poor Aleuts on the islands received for skins then worth from \$5 to \$20 in the Chinese market.

The seal islands were early looked upon by the managers of the Russian Fur Company as an unfailing treasury from which to draw in times of need. At the beginning of the nineteenth century, when breadstuffs and all other kinds of provisions were shipped to the colonies through Siberia by land, and thence across from the Okhotsk sea to Sitka, frequently failing to arrive at the proper time, Baranof, the chief manager, was obliged at times to purchase whole cargoes of provisions and merchandise from the English and American traders, and having no money on hand for transactions of such magnitude, and drafts upon the company's agents at Hamburg and St. Petersburg being looked

upon with distrust, he hit upon the expedient of paying in fur seals, a currency always at hand when needed. At first this mode of payment proved to be profitable enough, the masters of such vessels accepting each skin as the equivalent of 1 Mexican dollar. No sooner, however, were these transactions known by the shrewd merchants of Boston and New York than expedition after expedition was fitted out from these American ports, with the sole view of exchanging cheap provisions and merchandise for fur seals at Sitka, and then selling the same at an immense profit in Chinese ports. This, of course, occurred before the Russians had any intercourse with the Chinese through their seaports.

The managers of the Russian American Company in St. Petersburg being informed of this traffic, at once ordered the shipment of seal skins to China direct on account of the company; but being almost continually in want of provisions, the company's representative on the American coast could not always comply with his instructions. This measure, however, was the cause of raising the price of seal skins when used as currency from \$1 to \$2. An end was finally put to these transactions by peremptory orders from St. Petersburg to make no further payments in fur seals. The reason for this order was a rather sharp transaction on the part of a Yankee skipper, who, having sold a cargo of provisions to Baranof at Sitka at a good price, and having received in payment seal skins at the rate of \$1 each, crossed over to the coast of Kamchatka with his ship, and there sold the skins to the agent of the same company for \$3 each.

At the time of Pribilof's discovery of the seal islands they were uninhabited. The vast number of seals shipped thence during the first decade succeeding the discovery were killed by laborers imported from the Aleutian islands.

It will thus be seen that the Russians recognized no proprietary rights as vested in the Aleutian natives, whom they themselves had carried to the islands. Subsequently, when the Russian American Company obtained exclusive privilege, these laborers were allowed and often compelled to remain for long periods of time, sometimes for a whole generation, without being relieved. Under one clause of the company's charter the corporation became for the time over which their lease extended sole owner of "everything within the limits of the Russian possessions in America, found upon the surface, or in the air, or in the bowels of the earth"; and consequently every fur-bearing animal killed by the natives was considered the company's property, any compensation being looked upon as the equivalent for time and labor expended in securing the skin.

The restrictive measures adopted as before mentioned upon Rezanof's recommendation proved effective, as only 10 years later Lieutenant Kotzebue, who circumnavigated the globe under the auspices of the Russian government, reported that from these 2 seal islands the Russian American Company derived a more regular and ample revenue than from any other portions of its vast possessions.

The skins that had accumulated on the Pribilof islands previous to Rezanof's arrival had been most carelessly cured by the crude process of drying them over fires. Of 60,000 such skins, shipped from the islands to Canton on the Russian ship *Neva*, one-half were entirely spoiled before the vessel reached the tropic latitudes, and had to be thrown overboard. Gradually, however, improvements were introduced in the management of the business and in the operations of curing and packing. The art of plucking and dyeing the seal skin was an invention of the Chinese, reported by the Russian company's agent at Okhotsk as early as 1799. The exact date at which this process was adopted by English furriers can not now be ascertained, but it is safe to presume that it occurred at some period during the first half of the nineteenth century, as a regular demand for seal skins in England can be traced to that time. At a later period, about the year 1850, shipments directly to New York and London were inaugurated, and these shipments continued at the rate of from 20,000 to 40,000 skins per annum until the transfer of the Russian possessions to the United States.

When the question of acquiring Russian America was agitated in Congress no particular stress was laid upon the prospective value of the fur-seal industry, though it was known as one of the principal sources of revenue of the Russian American Company. This firm was then but beginning to reap the benefits resulting from careful management extending over half a century, and during the last few years of their control of the Alaskan territory they found themselves enabled to send to the fur markets of the world from 60,000 to 80,000 seal skins per annum. It is not easily explained why the managers of the Russian company should have agreed to sell or abandon their rights and privileges at a time when the prospect of an abundant and regular revenue was more promising than it had been for the preceding half century. During the last decade of Russian possession the agents in charge of the Pribilof islands reported each year that the fur seals were increasing in such a degree that the rookeries were crowded beyond their capacity; and each report was accompanied by urgent requests to kill more seals to make room for the increasing millions.

The fact that it was possible to continue the slaughter of seals at the rate of 100,000 per annum for 20 years after the sale of the territory would seem to prove that when the United States acquired this valuable resort it was in as prosperous condition as when first discovered by Gerassim Pribilof on that memorable foggy day in June, 1786.

The first limitation of the killing of seals to 100,000 per annum was based upon careful observations and estimates, but the indiscriminate slaughter inaugurated within a few years past by sealing vessels hailing chiefly from British Columbia, who strike the migrating animals on their way to the breeding grounds, killing males and females alike, the latter almost ready to drop their young, has fully justified the late more radical restrictions as to the number of seals to be killed on the breeding grounds.

In times past, when there seemed to be no danger of the extinction of the animal, the prices of seal skins in London sometimes fluctuated and were affected by temporary overstocking of the market, but for the future there can be no prospect except a constant rise in the value of this commodity, the beauty and durability of which as a material for garments is such as to insure for it a demand among the votaries of fashion as long as it can be obtained; and just so long as the fur-seal industry can be maintained Alaska will be a valuable possession, without reference to any other resources that may be developed within its borders.

METHOD OF CAPTURE OF FUR SEALS.—The killing of fur seals by the lessees of the Pribilof islands is accomplished altogether on land, and it has been reduced from long observation and practice almost to a science, everything connected with it being conducted with the most perfect system and dispatch.

The able-bodied Aleutian hunters now living upon the islands of St. Paul and St. George, under the terms of the lease and under agreement between themselves and the lessees, are the only individuals permitted to kill and skin seals, to the number of the annual quota, as long as they are able to perform the labor satisfactorily within a given time. For this labor they are remunerated at the rate of 40 cents for killing and skinning each seal. Life-long practice has made them expert in using their huge clubs and sharp skin knives, both instruments being manufactured expressly for their use. These men are as a class proud of their skill as sealers, and too proud to demean themselves by doing any other kind of labor. For all kinds of incidental labor, such as building and repairing, strapping and packing the bundles of skins, loading and unloading the vessels, etc., the lessees find it necessary to engage laborers from the Aleutian islands. These latter individuals are paid at the rate of \$1 per diem, but are not allowed to remain on the islands beyond the killing season.

The labor connected with the killing of the annual quota of fur seals may be divided into two distinct processes. The separation of the seals of a certain age and size from the main body and their removal to the killing grounds form the preliminary operation; the final process consists of another selection among the select and killing and skinning the same. The driving as well as the killing can not be done in every kind of weather, a damp, cloudy day being especially desirable for the purpose.

As it is the habit of the young male seals up to the age of 4 years to segregate themselves from the main herd and lie upon the mossy ground in the rear of the so-called rookeries or groups of families that line the seashore, the experienced native can easily crawl in between the families and these "bachelors" (kholostiaks), as they were named by the Russians. This once accomplished, the animals are driven inland in packs of from 1,000 to 3,000 each. It is unsafe to drive the seals more than 5 or 6 miles in a day, as they easily become overheated, which injures the quality of their skins. When night comes on the driving ceases and sentries are posted around each drove to prevent the animals from straying; occasional whistling on the part of the guards suffices to keep the animals together. In the morning, if the weather be favorable, that is, cool, rainy, or overcast, the drive is continued until the killing ground is reached, where the intended victims are again allowed to rest over night under guard. Finally, as early as possible in the morning, the sealers appear with their clubs; small groups of 20 or 30 seals are successively separated from their fellows, surrounded by the sealers, and the slaughter begins. Even at this last moment another selection is made, and any animal appearing to the eye of the experienced Aleut to be either below or above the specified age or size is dismissed with a gentle tap of the club and allowed to scamper off on its way to the shore, rejoicing at its narrow escape.

The men with clubs proceed from one group to another, striking the seal violently on the nose. They are immediately followed by men with long, sharp knives, who stab each stunned seal to the heart to insure immediate death. These men are in turn followed by the skinners, who, with astonishing rapidity, divest the carcasses of their valuable covering, leaving, however, the head and flippers intact. Only a few paces behind the skinners come the carts drawn by mules, into which the skins are rapidly thrown and carried away. The wives and daughters of the sealers linger around the rear of the death-dealing column and reap a rich harvest of luscious blubber, which they carry away on their heads and shoulders, the oil dripping down over their faces and garments.

The skins, yet warm from the body, are discharged into capacious salt houses and salted down for the time being like fish in kenches. This treatment is continued for some time under the application of heavy pressure, and finally they are rolled in bundles of two each, with the fur inside, securely strapped, and are then ready for shipment.

PROCESS OF CURING FUR-SEAL SKINS.—The process by which these unsightly, ill-smelling bundles are transformed into the beautiful fabrics of fashion may be briefly described as follows: when the skins are received by the furrier, with the salt still adhering, the latter is washed off and the remaining fat removed from the inside with a beaming knife, great care being taken that no cuts or uneven places are made in the pelt. The skins are next thoroughly cleansed by being stretched upon beams, with their fur side up, when all grease and other matter attached thereto is carefully removed. The next step in the proceeding is the stretching of the pelt upon frames and drying the same at a moderate heat. After this first drying they are soaked in water and roughly washed with soap. After this the fur is dried again, the skin being kept moist, and the operator pulls out the long hair with the assistance of a dull knife. This operation, a very delicate one, is repeated several times, until nothing but the soft fur remains. The pelts are then again alternately dried and dampened on the skin side, and shaved until the

latter obtains a fine, even surface. Then follows the slow and tedious process of drying and softening the skins by treading them with bare feet in tubs or hogsheads with a sprinkling of the finest hard-wood sawdust to absorb any fragment of grease still adhering to the fur. In dyeing, the liquid dye is applied with a brush, carefully covering the points of the standing fur. The skin is then gently pulled to and fro, so as to make the points touch each other, and partially dried. The dyed surface is then brushed and another coat applied, the same process being repeated a number of times. From 8 to 12 coats produce a good color. The American furriers then wash the skins again and cleanse them with sawdust, while the English manufacturers dispense with washing after dyeing.

The manner in which the proceeds of the joint labor of all the sealers are divided among them is quite worthy of attention, as in its way it solves to a certain extent one of the problems of communal labor. This rather complicated system was founded upon measures adopted centuries ago by the Russian trappers and hunters of Siberia. As an example, the division of proceeds on the island of St. Paul for one year is presented.

The sum total of joint earnings is first ascertained, next the number of claims upon the total is found, that is, the families, individuals, and institutions to be supported. Special donations are next in order, these consisting of gifts to the chiefs or superintendents of labor of \$150 each, \$100 to 2 men connected with the church service, and one annual donation of \$450 to the parsonage of Unalaska. The total remaining after these deductions is divided among the church of St. Paul island, the priest of that church, 64 actual laborers and heads of families, and 14 invalids and widows, the latter two being divided into 3 classes, according to their wants. The church, priest, and able-bodied men are entitled to what is called first-class shares in the proceeds, the others receiving second, third, and fourth class shares, respectively. The total number of persons to divide earnings by shares in that year was 82, counting the church and priest at 2 shares. The sum total of earnings was in that instance divided by 82 in order to ascertain the value of 1 first-class share. The value of a second-class share is ascertained simply by deducting 10 per cent from the first, and the same rule is followed as to the third and fourth class shares. The reduction made in 3 classes of shares leaves a sum sufficient to cover all the special gifts before mentioned.

In the year referred to the division was as follows: the total earnings of sealers were \$32,153.40; there were 68 first-class shares, 6 second-class shares, 6 third-class shares, and 2 fourth-class shares. No better plan could be devised to provide in a just and equitable manner for all the members of an isolated community cut off from all means of support than this one secured by the government.

LAND FURS.

Of land furs the records now available are less satisfactory with regard to the past. We have, however, an official statement covering 21 years, from 1842 to 1862, both inclusive, in which skins of foxes of three kinds, black, cross, and red, are reported as numbering 111,851, or 5,326 per annum; beaver, 157,484, or 7,499 per annum; land otter, 170,473, or 8,118 per annum; marten, 13,682, or 652 per annum.

The marten or sable, though inferior to the Siberian species, is quite valuable, but the supply is limited. Whether it ever existed in large numbers is difficult to ascertain, because the Russian company did not ship them from the colonies, but gave or sold them to the higher class of its employés. Under the present rule of permitting only natives of the soil to hunt or trap, the balance between supply and consumption seems to be well preserved. No complaints are heard of the extinction of any fur-bearing animals with the one exception of the beaver.

As the whims of fashion change the prices of certain kinds and qualities of furs, traders induce the natives to secure those kinds in preference to others, and thus discrepancies arise in the annual catch, but this makes no difference as to the total. The fact that game, such as moose and reindeer, has been killed off to a great extent in the regions furnishing the principal land furs would lead us to expect that the natives, deprived of their natural food supplies, would be compelled to purchase largely of the imported provisions of the traders and hunt more actively to provide means for the purchase of food. As far as can be observed, that is the case only with regard to flour, though they seem to spend now for food money which was formerly squandered in beads and gaudy clothing unsuited to their mode of life. If extinction of fur-bearing animals in the continental region of Alaska should take place in the future it will be due entirely to the constant drain from the Arctic shore, where the Eskimo are constantly exchanging furs for whisky and other intoxicating liquors, drawing largely upon furs obtained from their neighbors in the interior as far south as the Yukon, for which they receive no return but the means of stupefying themselves for days and weeks, and perhaps a breech-loading rifle, which becomes useless in their hands as soon as the fixed ammunition is expended. The fur-bearing animals on the immediate seacoast are almost exterminated or are of little value, but the equivalent return of supplies of alcohol must be obtained, and as a consequence a traffic with their southern neighbors is carried on by these people on the plan of buying furs for a little whisky and selling them for a larger quantity, the evils of this system working in both directions.

DISTRIBUTION OF FUR-BEARING ANIMALS.

THE FUR SEAL (*Callorhinus ursinus*).—The only hauling or breeding grounds of the fur seal known in Alaska are on the islands of St. Paul and St. George, with the addition perhaps of the adjoining Otter islands, where these animals occasionally haul up but do not breed. From early spring until late in the autumn fur seals are met with in all portions of the North Pacific inclosed by the Alaska coast, from latitude $54^{\circ} 40'$ to Mount St. Elias, and thence westward along Prince William sound, the east side of Kenai peninsula, and along the Alaskan peninsula and its continuation, the Aleutian chain of islands. In Bering sea the animal has not been observed to the northward of latitude 58° . In the spring of the year only fur seals are found in large numbers in the vicinity of the Straits of Fuca and along the coast of Vancouver and Queen Charlotte islands. During the time of the general migration to and from the breeding grounds several of the passes through the Aleutian chain are crowded with adults in the spring and with young seals and yearlings in the late summer and autumn. The presence of large numbers of these animals in these secluded waters and those of Prince William sound late in the season (in June and July) has often given rise to the supposition that some breeding grounds must exist in these localities, but the most minute and persistent search has failed to sustain the supposition.

About 50 miles south of the Aleutian chain large numbers of seals are frequently seen during the summer, and for half a century rumors of the existence of breeding grounds in the neighborhood were launched from time to time.

The Russian American Company fitted out numerous exploring expeditions, but these were always unsuccessful. The last enterprise of the kind was undertaken by a former employé of the Russian company, under the auspices of the former lessees of the seal islands, on the schooner John Bright, in 1873, being the third expedition of the kind fitted out by the Alaska Commercial Company in 2 years. On this occasion indications of land, such as are accepted by all navigators, were not wanting in the waters included in the search. After a season of fruitless search the captain finally abandoned his undertaking, coming to the conclusion, however, that within a short distance southward from the Aleutian islands there existed banks sufficiently shallow to serve as feeding grounds for the seals, which possibly visit them for that purpose even during the breeding season, as a journey of 300 miles is but a brief excursion for these rapid swimmers in search of food.

All other expeditions in search of the supposed "winter home" of these seals have met with the same lack of success. The Pacific ocean and the Antarctic have been scoured by the sealers and emissaries of trading firms, but at the present day the fact seems to be established that the fur seals, after leaving their confined breeding places, scatter over the broad Pacific to localities where extensive elevations of the bottom of the sea enable them to subsist upon fish until the instinct of reproduction calls them again from all directions to one common goal.

HOME OF THE SEA OTTER.—The sea otter seems to exist chiefly on a line parallel with the Japanese current from the coast of Japan along the Kurile islands to the coast of Kamchatka, and thence westward along the Aleutian chain, the southward side of the Alaska peninsula, the estuaries of Cook inlet and Prince William sound, and thence eastward and southward along the Alaska coast, the Alexander archipelago, British Columbia, Washington, and Oregon.

At the beginning of the present century large numbers of these animals were also found on the coast of California, from which they have now disappeared altogether, and on the coast of Oregon, Washington, and British Columbia they have decreased to such a degree that only at long intervals is the patient hunter rewarded with the prize of one of these valuable skins. On the west coast of Vancouver island, in the vicinity of Nootka sound, where Meares, Portlock, Dixon, and others of the earliest English northwest traders found thousands of sea-otter skins in the possession of chiefs, the animal has been almost exterminated, and there can be no doubt that had it not been for the protection afforded under the Russian monopoly for nearly three-fourths of a century this animal would be extinct to-day in Alaskan waters.

The Eskimo tribes entered understandingly into the measures of protection introduced by the Russians. The Thlingits, on the other hand, a fierce and savage people opposed to system and order or control of any kind, were the most active agents in the extermination of the animal. From the time they began to understand the value of sea-otter skins, from the eagerness with which the early English visitors purchased all they had, even mere scraps and rags, the Thlingits, all along the coast from the mouth of the Copper river southward, hunted and slaughtered the sea otter indiscriminately and in the most clumsy manner, frightening away as many as they killed. Had these tribes joined to their recklessness the same skill and patient persistence observed among the Eskimo and Aleuts, there would be no sea otters on that coast to-day; but, in their wooden canoes, they can only hunt in fine weather, and at such times the sea otters retire from the coast to a distance to which no Thlingit would venture.

In the Russian possessions, about the Kurile islands and the coast of Kamchatka, but few sea otters are now killed annually. At three different times during the existence of the Russian American Company their agents on the Kurile islands and at Kamchatka reported the sea otter extinct, and each time the animals appeared again after they had not been hunted for a few years. Along the Aleutian chain the sea otters frequently change from one feeding ground to another. For instance, for a long series of years the island of Attu and several smaller islands surrounding it furnished many hundreds of sea-otter skins every year, but for some unexplained reason a

migration eastward took place, and at the present time from 4 to 8 skins are all that the poverty-stricken inhabitants sell to the traders. The numerous islands between Attu and Atka are each visited in turn by the hunters about once in 3 years, and under such management the numbers of the animals appear to remain the same.

The outlying reefs of Atka, which once furnished the most abundant supply of these valuable skins, are now entirely deserted, and the inhabitants take long hunting voyages to the westward under convoy of schooners belonging to the trading firms. From the island of Umnak eastward the sea otters become more frequent, until they are found in their greatest abundance in the district of Sannak and Belkovsky. Here, within a radius of not more than 50 miles, over 1,000 sea otters are secured every year by the fortunate hunters, without any apparent decline in numbers. From this point in a northeasterly direction the coast of the Alaska peninsula is lined with hundreds of islands and reefs, affording ample facilities for shelter and refuge to the persecuted animal, and though it is hunted here recklessly by white and native hunters alike, using firearms, in violation of existing regulations, no alarming decrease was noted previous to the introduction of steam launches. Still further northward, in the waters of the Kadiak archipelago and the southern half of Cook inlet, and thence eastward to Prince William sound, sea otters are found in less numbers than in the district described above, the annual catch having dwindled to 400 or 500 skins.

As far as it is possible for us to know the only enemy of the sea otter is man, with the exception, perhaps, of the orca or killer whale. We have reports of natives only in support of the last statement, but as this whale is known to make sad havoc among fur seals, there is no reason to doubt that it occasionally attacks the somewhat larger sea otter. Skins have come under observation marked with scars produced evidently by the teeth of some large marine animal.

The distribution of the sea otter along the coast of Alaska has not essentially changed within historic times. Certain localities have been abandoned by the animal altogether, others temporarily; but where Bering, Chirikof, and Steller, and subsequently the Russian promyshleniks, found the sea otter more than a century ago, we find it now, and the supply of such skins in the fur markets of the world was up to within a few years as great as at any time since the first indiscriminate slaughter prior to the establishment of the Russian monopoly; in fact, it was but recently much greater.

THE LAND OTTER.—The land otter is one of the most widely distributed fur-bearing animals in Alaska, ranking in this respect next to the common cross fox. The skin, however, is much more valuable, since of late it has been utilized for the manufacture of an imitation of seal skin. The skin has always met with ready sale in Russia, where it is used extensively for collars and cuffs of the uniforms of army officers of the line who can not afford the more expensive sea-otter trimmings. The demand for it in former times was so great that the Russian American Company, in leasing a strip of land to the Hudson Bay Company, was not only willing but anxious to accept the land-otter skins. The Chinese also have a liking for this fur.

The land otter is found on the whole coast of Alaska from the southern boundary to the northern shore of Norton sound. It also occurs on all the islands inside of these limits as far as Unimak in the west and Nunivak in the north. Within the Arctic circle the land otter is confined to the upper courses of rivers emptying into Kotzebue sound and the Arctic ocean, such as the Colville, the Kowak, the Inland, and the Selawik. It is found also along the whole course of the Yukon as far as known, along the Kuskokwim, and all over the delta lying between the mouths of these rivers, in the valleys of the Togiak and the Nushagak, and in nearly all parts of the Alaska peninsula and Unimak island, as well as on the Kadiak archipelago, the shores of Cook inlet, on the Kinik and Sushitna rivers emptying into the same, on Prince William sound, and on the Copper river. The traders report the land otter also along the whole coast from Mount St. Elias to the southern boundary, with the exception of the smaller islands.

THE BEAVER.—The beaver was once one of the most important among the fur-bearing animals of continental Alaska, but both in supply and demand a great decline has taken place during the last half century. It would seem that the smaller demand would cause an increase in the supply, but this has not been the case. Throughout the whole interior region north of Cook inlet and south of the Yukon river the beavers have frequently suffered from excessive and prolonged cold during the winter, the ice in rivers and ponds forming so rapidly and to such thickness that the animals found it impossible to keep open the approaches to their dwellings under water, and they died from starvation before the thaws of spring opened their prisons. The Indians of the Kinik and Tanana rivers state that after an extraordinarily cold winter they have frequently found the putrefying carcasses of hundreds of beavers in their so-called lodges. Thousands of old beaver dams over the continental portion of Alaska also testify to the former abundance of the animal, which now is thinly scattered over the same ground. At nearly every trading post throughout Alaska, where beaver skins are secured at all, hundreds are purchased now where thousands appear on former records.

The northern limit of the beaver seems to be but little to the southward of that of the land otter, considerably above the Arctic circle, being identical with the limit of trees. Skins are obtained from the natives living on the northern tributaries of the Yukon river, which have passed into the hands of the latter from the waters of the Colville and other rivers emptying into the Arctic.

All the streams emptying into Kotzebue sound are still inhabited by the beaver, and it is found on the east shore of Norton sound, along the whole coast of the Yukon and its tributaries, among all the lakes and streams of the Yukon and Kuskokwim deltas, in the lake and river systems of the Togiak and the Nushagak, about Lake Iliamna, and the lakes and rivers of the Alaska peninsula down to a line identical with that forming the northern boundary of the Aleutian tribe. On the shores of Cook inlet and the rivers emptying into the same beavers are still comparatively plentiful, especially in the vicinity of the large lakes occupying the central portion of the Kenai peninsula. Beaver skins are also obtained from the natives occupying the headwaters of Copper river and the series of lakes connecting this river with the Kinik and the Sushitna rivers.

In the southeastern section of Alaska, west of Mount St. Elias, traders report the existence of the beaver on streams and rivers of the mainland, but it is possible that the skins obtained in that vicinity come from British possessions, whence all these rivers flow.

In the past, when the Hudson Bay Company reigned supreme throughout the beaver country of northwestern America, the skins of these animals represented in trade the value of an English shilling each, and were used and accepted as common currency. Within the Russian possessions the value was always somewhat higher, and at the present time the price of a beaver skin of average size in Alaska is from \$1.50 to \$2, according to weight, and the market price from \$5 to \$12.

The Indians of the interior and a few of the Eskimo tribes look upon the meat of the beaver as a great delicacy. It is a dish that is always set before honored guests, and is much used during festivities. The long incisors of the beaver form an important item in the domestic economy of the natives who hunt this animal, the extraordinary hardness of these teeth making it possible to use them in the manufacture of chisels, small adzes, and other tools used in the working of wood and bone. Under the rule of the Russian American Company the exportation of castoreum was quite extensive, but now that article meets with no demand outside of the Chinese market. The Celestials still look upon it as a valuable part of their materia medica.

THE BROWN BEAR.—The brown bear of Alaska, a huge, shaggy animal, varying in length from 6 to 12 feet, is distributed over nearly every section of the territory, but seems to prefer an open, swampy country to the timber. The northern limit of this animal is about latitude 67° north, where it is found on the headwaters of the rivers emptying into the Arctic, and occasionally on the streams emptying into Kotzebue sound and in the interior of the Kotzebue peninsula. Being an expert fisher, the brown bear frequents during the salmon season all the rivers emptying into Bering sea and the north Pacific and their tributaries as far as the fish will go, and at the end of the annual run of fish the animal retreats into the recesses of hills and tundra, where berries and small game are most plentiful. The banks of all the streams are lined on either side with the well-trodden trails of these huge animals, offering better facilities for the progress of the traveler than do the paths of men. The brown bear is the great roadmaker of Alaska, and not only are the swampy plains intersected with paths made by him in all directions, leading generally to the easiest fording places of streams and rivers, but the hills and ridges of mountains to the very top show the traces of this omnipresent traveler. He shows great judgment and local knowledge, for his road up the mountain is safe to follow as the most practicable route. In great numbers this animal is found in the region between the lower Kuskokwim, the Togiak, and the Nushagak rivers, and also on the Alaska peninsula and the island of Unimak. On the island of Kadiak this species of bear is still plentiful, but the largest specimens are shipped from the coast of Cook inlet.

On the steep sides of the volcanic range of mountains on the west side of Cook inlet brown bears can be seen in herds of 20 or 30. Their skins are not very valuable, and owing to this fact, and to the fierce disposition of the animals, they are not commonly hunted. All the natives of Alaska respect them, and it is the universal custom of hunters to address a few complimentary remarks to the intended victims before attempting to kill them. Perhaps the skins of fully one-half of the brown bears killed throughout Alaska are retained by the natives for bedding, and to hang before the entrances of houses in place of doors. The smaller skins are tanned and cut up into straps and lines, and the natives of the interior utilize them for manufacturing sledge fastenings and the network bottoms of snowshoes, because this leather does not stretch when exposed to moisture, as moose and deer skins do.

THE BLACK BEAR.—The black bear of Alaska is widely distributed over the continental portion of the territory, but is generally confined to regions of timber and mountains; as far as known it exists only on a few islands on Prince William sound and on Kadiak island. The northern limit of the black bear extends, according to observations made by Mr. E. W. Nelson, even beyond that of his brown cousin. It is said to exist farther down the rivers emptying into the Arctic, and to be quite plentiful thence southward to the valley of the Yukon. The western limit of the region where the black bear is found is perhaps a line drawn from the Selawik river southward to Nulato, and thence across to the Kuskokwim river, in the vicinity of Kolmakovsky.

From the upper Nushagak many skins are obtained, and one trader reports black bear even west of this line, on the lower left bank of the Kuskokwim and on the Togiak peninsula, but as that region is not timbered the statement appears doubtful. From Bristol bay eastward the black bear is confined to the timbered regions about Lake Iliamna, but is more plentiful on the coast of Cook inlet and in the interior of the Kenai peninsula. From the headwaters of the Yukon, Tanana, Sushitna, Kinik, and Copper rivers many black bear skins are brought down

to the seacoast, and from Prince William sound and eastward the mountains and forests harbor large numbers of these animals. These skins command high prices, and are still increasing in value; but the animals are shy, and to hunt them requires much time and patience. The natives do not fear them in the least, and, in fact, it is considered a boy's work to kill them. Owing to its value, probably, the natives never use the black bear skin for bedding. The glossiest and largest of these skins come from the St. Elias alpine range and the vicinity of Prince William sound, but the black bear never attains the size of the brown variety.

THE FOX.—The only fur-bearing animal found in every section of Alaska is the red fox. From Point Barrow to the southern boundary and from the British line to the island of Attu this animal is ever present. It varies in size and quality of its fur from the finest Nushagak variety, equal to the high-priced Siberian fire fox, down to the diminutive yellow-tinged specimen that rambles furtively over the rocky islands of the Aleutian chain. Its color introduces variety among the uniform snow-white robes of its polar cousin along the Arctic shores, and, with the unwelcome persistence of a poor relation, it mingles with the aristocratic black and silver foxes, always managing to deteriorate in course of time the blood and coating of the "first families". Mountain or valley, forest or swampy plain, all seem to be the same to him. The red fox seems perfectly indifferent in regard to his diet, fish, flesh, and fowl being equally to his taste, with such little entremets as shellfish, mussels, and eggs of aquatic birds. He has an advantage over his fellows in the fact that his skin is cheap and the natives do not eat his flesh except in times of famine. They hunt or trap the red fox only when nothing else can be obtained; the interior tribes, however, make winter garments of their skins.

Being an inveterate traveler, the red fox is not above making an occasional sea voyage on the ice, which explains his presence on all the islands of the Aleutian chain, the Shumagin group, and even on St. Lawrence and Pribilof islands, over 100 miles from any other land. It is common practice among the Innuvit and Indian tribes in the north to make household pets of young foxes whenever they can be secured alive. The average price of red fox skins throughout the country is about \$1.

The king among the various tribes of the vulpine family is the black or silver fox. He is found in his prime in the mountain fastnesses of the interior and on the headwaters of the large rivers. Here he appears of large size, with long, soft, silky fur, varying in color from a silver tint to a deep jet black, the latter being the most rare and highly valued. These two qualities are found principally in the mountains on the boundary between southeastern Alaska and British Columbia, in the country of the Chilkats and the Takus, on the Upper Copper river, the Upper Yukon, Tanana, and Kuskokwim rivers. In the last-named regions the traders pay from \$10 to \$15 for each skin, but in southeastern Alaska, where competition is more fierce, as much as \$40 or \$50 in coin is frequently paid for one skin.

Along the Yukon and its northern tributaries the black fox of an inferior quality is found almost on the seacoast, and on the shores of Norton sound, and in the interior of Kotzebue peninsula. The animal is also reported to exist on the headwaters of the Colville river up to the 68th degree of latitude. Black foxes are quite plentiful on the Kadiak islands; and they occur on the Shumagin group, Unimak island, and on most of the Aleutian islands as far as Atka, but to many of these points they have been transported through the agency of man. On the timberless highlands of the far west the fur of these animals seems to deteriorate in quality.

Another species of the fox family is generally found with the silver fox, forming, in fact, the connecting link between the plebeian and the black aristocrat. This is the cross fox, partaking of the distinguishing qualities of both the red and black, evidently the result of an unrestrained intermixture. The quality and the color of the fur of the cross fox come much nearer those of the red, and the skin of the former exceeds that of the latter but little in value, from \$2 to \$3 being paid in Alaska for the best of them. While the distribution of the cross fox is naturally almost identical with that of the silver variety, the animal is found farther westward on the Aleutian islands, and is more frequent on the Alaska peninsula, though on the islands of Prince William sound and on Kadiak island both the black and cross varieties exist.

The skins of silver foxes form the most important element in the trade of the whole Yukon basin, being almost the only high-priced skins found in that vicinity, but they are by no means numerous. The only section of Alaska where these animals are of the best quality and in large numbers at the same time is in the mountains about the Chilkat and Taku rivers, and there the reckless competition of traders leaves but little margin for profit.

Of the Arctic fox we find in Alaska two varieties, one white and the other a bluish gray, commonly called "blue fox" by the traders. The white fox is found along the coast of continental Alaska from the mouth of the Kuskokwim northward to Point Barrow and the eastern boundary. Its fur is of a snowy white, especially in the young, and both soft and long, but owing to the lack of durability it does not command a high price in the market.

These animals are very numerous north of Norton sound and are not at all shy. Natives and travelers alike report instances of the fearlessness with which these foxes enter their camps and even dwellings in search of food or out of mere curiosity. A large portion of the skins secured by Eskimo and other natives is used by themselves for trimming their garments, and the remainder falls chiefly into the hands of the whalers and whisky smugglers, so that it is impossible to obtain accurate figures as to the annual catch. They may be called omniverous, and they refuse nothing that will fill their stomachs. In the depths of winter the natives find it dangerous to leave any article of clothing, dog harness, or boat material within their reach.

The blue fox exists now on several of the Aleutian islands, where it was found by the first discoverers in 1741. This animal is also found on the Pribilof islands, and here, where it has been possible to protect the species against intermixture with other and inferior foxes, the skins are of the finest quality, commanding a high price in the market. Traders report the existence of the blue fox to a limited extent in the vicinity of the Ugashik, on the Alaska peninsula, and on the Lower Kuskokwim; and it also occurs on the delta between the mouths of the Yukon and the Kuskokwim. Captain Hooper, of the revenue-marine service, who commanded the United States ship *Corwin* during several successful cruises in the Arctic, reports that he saw blue foxes at Cape Espenberg, Elephant point, Hotham inlet, Point Hope, Point Belcher, and Point Barrow. He states also that he "found the blue fox more plentiful on the Siberian than on the American coast, and that all the blue foxes in the far north are so inferior to those on the islands of Bering sea as to suggest the possibility of their being a different species". Even on the Arctic coast Captain Hooper saw blue foxes, taken at the same place and time, but differing very much in the color and quality of the fur. On the Pribilof islands from 1,000 to 1,500 of the best quality of blue fox skins are annually shipped and several hundred of a little inferior quality from Attu and Atka islands, but it is impossible to ascertain the quantity obtained along the Arctic coast by whalers and traders.

THE MINK, MARTEN, AND OTHER FUR ANIMALS.—The Alaska mink is distributed almost as widely as the red fox, but does not extend to the islands. It is most plentiful in the vast tundras or mossy marshes of the Lower Yukon, Kuskokwim, Togiak, and Nushagak basins. The skin is of very little value. The Russian American Company did not purchase it at all, and even now the trade in this article is confined chiefly to the natives, who manufacture it into garments or use it for trimming. No more than 10,000 or 15,000 are exported annually. The northern limit of the mink is but little south of the Arctic coast, and from thence southward it is found everywhere throughout the continent, until its southern and western limits are reached on the Alaska peninsula, on a line between Cape Stroganof and Sutkhum island. The only islands on which minks are found to exist are those in Prince William sound and perhaps some of those in the Alexander archipelago. No skins of this kind shipped from any portion of Alaska equal in quality or value those of British Columbia, Washington, and Oregon, the traders simply buying them for the sake of accommodating their customers. The region about Togiak river and lakes, which furnishes scarcely any other fur than mink, has for that reason been entirely neglected by hunters and traders. Until a few years ago no white man had penetrated into the recesses of the tundras, and the inhabitants, having no intercourse with civilized men, are still in their primitive state of barbarism. The natives living on the Yukon and Kuskokwim deltas are called "mink people", in derision, by the other natives, a term equivalent to beggar.

The limits within which the marten is found throughout Alaska are almost identical with those of standing timber. The animal is occasionally found as far north as latitude 68°, and inhabits the valleys of the Yukon, Kuskokwim, and Nushagak rivers, from the headwaters down as far as timber exists, on the wooded mountain ranges of Cook inlet and the Kenai peninsula. On the Chugatch alps, the Copper River range, and the St. Elias alps, martens are plentiful and of the finest quality. Very fine skins of this kind are also purchased by the traders in southeastern Alaska, a portion of these probably being obtained from British possessions. The Alaskan marten or sable is inferior to the Siberian fur of that name ("sable" is merely a corruption of the Russian word for marten, "sobal"), and is by no means a distinct animal. The Russian American Company considered the Alaska sable of so little value that it did not export it at all from the colonies, but sold the whole catch to officers and employés of the company. The price set upon these skins was small indeed, being only 10 cents each. After the transfer of the territory a demand for them arose, and a few years of competition raised the price to \$4, and even \$5 and \$6, much to the delight of the astonished natives; but the inferiority of the animal soon made itself felt, and reaction set in, until, at the present day, the price of marten skins in northwestern Alaska does not exceed \$1.50, though in the southeastern section excessive competition still keeps up a higher figure.

A few more fur-bearing animals existing in Alaska may be mentioned, but they are not of sufficient importance to deserve more than a passing notice. The polar bear is found only on the Arctic coast, where ice in large bodies exists, and with the moving ice fields he enters and leaves the waters of Bering sea. The number of skins annually secured forms but a very small item in the bulk of trade.

The lynx is found only in the wooded mountains of the interior on Kenai peninsula and the St. Elias range of mountains, the skins being used chiefly for carriage robes and trimming, but the fur is not durable.

Wolves, both gray and white, are found, but are rarely killed.

Muskrats exist all over Alaska, but the skins at most are of low value and but few are shipped away.

Rabbits and marmots are killed for their flesh, and occasionally the poorer natives use the skins of the latter for garments.

Wolverines are rarely exported, as they find a ready market among the inhabitants of the coast region of the Yukon and Kuskokwim divisions, who prefer this shaggy, piebald fur to any other trimming for their garments.

EXPORTS OF FURS FROM ALASKA.

The first authentic list of fur shipments from Russian America was compiled at the beginning of the present century by Lieutenant Vassili Berg, of the Russian navy, who, having access to all the archives of Petropavlovsk, Nishnekamchatsk, Bolsheretzsk, and Okhotsk, included in his list all the importations from America from 1745 to 1797, with the exception of one cargo containing nearly 4,000 sea-otter skins (the ship *Vladimir*, Captain Zaikof, in 1779).

With the year 1797 the systematic operations of the Russian American Company began, though their charter was not promulgated until a year or two later, and from that time forth official tabulated statements of furs shipped from the colonies were published from time to time. Other tables can be found in the works of various authors and travelers, but it is safe to say that, generally speaking, the totals thus furnished were below the actual yield of furs. These tables, furthermore, do not include the large shipments of sea-otter furs from the Alexander archipelago by American and English traders at the end of the last and the beginning of the present century, aggregating at least 20,000 or 30,000 skins. The transactions of Baranof, the first chief manager of the Russian American Company, who paid for many ships' cargoes of provisions and trading goods in fur-seal skins, were also ignored, and no account was kept of the losses by frequent shipwrecks and through carelessness of subordinate employes. Thus, in one instance, the captain of the ship *Nadeshda*, in 1805, was obliged to throw overboard 30,000 fur-seal and several hundred sea-otter skins, which were found to have reached an advanced stage of putrefaction in the hold of the vessel. The naturalist Langsdorff, who accompanied Lissiansky in his voyage around the world, learned from the sealers stationed on St. Paul island that they had killed at least 30,000 for their blubber only, the skins having been thrown into the sea for lack of time, hands, and fuel to cure them.

Large quantities of furs formerly found their way from the Lower Yukon river and Norton and Kotzebue sounds to Siberia through the hands of Chukche and Mahlemiut traders, who obtained trading goods from Siberian merchants on the Anadyr and Indigirka rivers. These Alaskan furs were of course not included in any estimate, nor can one now give the number of skins purchased annually along the Arctic coast by the whalers and traders, many of whom carry run and breech-loading guns and spread ruin and destruction along these ice-bound shores. From the persistence with which these men continue to assume the risks of an unlawful traffic, in spite of the earnest efforts of our revenue marine, it must be concluded that both its volume and profit are large.

From southeastern Alaska also large numbers of furs are carried into British Columbia of which no record can be obtained, both natives and whites being there engaged in smuggling them across the frontier. All this goes to show that all returns of Alaska's yield of furs always have been, and necessarily must be, below rather than above the reality.

A tabular exhibit of fur shipments from Alaska since its first invasion by Siberian fur traders has been compiled from records found in the archives of the Russian American Company, from Russian official reports and other publications, and from the records of the San Francisco, Portland, and Port Townsend customhouses, supplemented by statements furnished by the few firms engaged in the Alaska trade. This table shows strikingly the extraordinary increase in the number of furs purchased annually since the transfer of Alaska to the United States. This discrepancy may, however, be only apparent to a certain extent, and could probably be much reduced were the means at hand of ascertaining the reliability of Russian returns. The officials of the Russian American Company were disposed to conceal the actual extent of their transactions, as the company, during the latter part of its existence, was constantly striving to obtain relief from the vast expenditure (for administrative and protective purposes) imposed upon it by the imperial charter. Another factor in the deficiency of returns may be found in the dishonesty of subordinate employes of the Russian company, who filled their own pockets at the expense of the shareholders. It was, however, the accepted policy of the managers of the corporation to keep the wants of the natives within the narrowest possible limits and thereby to reduce, as far as practicable, the quantity of merchandise required for the colonial trade, which had to be shipped around the world at an enormous expense. Since the transfer of the country, on the other hand, and since the breaking up of the monopoly, the rival trading firms for many years vied with each other in dazzling the eyes of fortunate hunters with a lavish display of costly articles of luxury and delicacies for the palate, exciting them to the utmost exertion in the pursuit of fur-bearing animals.

The annexed tabular statement, showing the shipments of furs from the Russian possessions in America, which subsequently became Alaska, between the years 1745 and 1890, furnishes an exhibit of this extensive traffic for the period mentioned. We can note at a glance the gradual advance of the Russian trappers and hunters along the Aleutian chain of islands toward the mainland, as we do not find any account of furs, such as are secured on the mainland only, until the third period here given, beginning with the formation of the Russian American Company. The figures are based altogether upon official records for the period covered by the Russian authority over the country. Subsequent to the transfer of the country to the United States exact figures were more difficult to obtain, but through patient inquiry it has become possible to obtain what may be considered as thoroughly reliable data. In most instances a careful comparison between the customhouse records and statements of trading firms and the great London fur sales was necessary to obtain a satisfactory result.

With reference to the fur-seal industry alone, we have compiled a few special tables showing the shipments of all kinds of fur seal from Alaska only, those secured by the Alaska Commercial Company during the continuance of their lease, as well as those shipped by private parties and the so-called seal pirates.

In speaking of Alaska seals all those secured in the waters adjoining the northwest coast of America are included, because we know enough of the habits of these peculiar animals to convince us that everyone of those seals was born on Alaska soil, on the Pribilof islands; no other breeding ground is ever frequented by the seals found on the American side of the Pacific.

The table hereto appended contains only the more important furs; those omitted would affect the total output by a few hundred thousand dollars at the most for the whole period covered by the table. The values of furs obtained from Alaska since the purchase of the territory are based chiefly upon statements of dealers made to special agents of the Census Office in the course of this inquiry, and checked by means of the bulletins of sales issued by the London auction firms.

One of the most prominent features of this exhibit is the disproportion between the quantities and values of marine furs and those of land animals (the former being nine-tenths of the total output), proving clearly that but for its claim of control over the waters frequented by the fur seals and sea otter the Russian company would have found no inducement to maintain its costly establishments on the shores of Bering sea and on the North Pacific.

Another feature brought out by this table is the excess in volume of the American fur catch in 23 years over all Russian shipments covering a period of 125 years. Unless suggestions, expressed elsewhere, as to the inaccuracy and undervaluation of Russian returns be justified, the only deduction to be drawn from such figures is that under the American régime the fur industry of Alaska has been conducted with criminal carelessness and wastefulness, which must end with its annihilation in the near future.

Within the last decade other resources of our ultimate northwest have been developed (among them the fisheries and gold mines), but if we consider the fur trade as the primary cause and reason for the settlement and development of Alaska, looking upon its total volume, representing a sum of less than \$100,000,000 in all the years, we are struck with the comparative insignificance of persistent and prolonged endeavor of the struggling masses of mankind. This sum, quite formidable in itself, represents the result of a fierce struggle of thousands of hardy men with inhospitable nature and adverse circumstances. Hundreds, yes thousands, of lives lost in the raging sea under lowering northern skies; hundreds of deaths amid whirling snows and chilling blasts; thousands more caused by the hardships and privations inseparable from the hunter's and sailor's life in those high latitudes; hundreds slain in conflicts between native tribes or rival Russians; hundreds more of daring hunters and mariners lost in those latter days in reckless pursuit of the precious otter—all these have been sacrificed, in addition to money spent and risked, to make up a sum that in these extravagant times does not exceed the wealth of several individuals in the United States.

FURS SHIPPED FROM RUSSIAN AMERICA AND ALASKA FROM 1745 TO 1890.

PERIODS.	Number.	Cost.	Value.	PERIODS.	Number.	Cost.	Value.
Total			\$93, 102, 970	1863-1867			\$3, 618, 717
1745-1797			13, 288, 720	Sea otter	11, 137	\$100	1, 113, 700
Sea otter	114, 105	\$100	11, 410, 500	Fur seal	198, 718	10	1, 987, 180
Fur seal	557, 024	2	1, 114, 048	Land otter	21, 816	5	109, 080
Land otter	5, 039	5	25, 195	Black fox	5, 800	20	117, 200
Black fox	16, 563	20	331, 200	Cross fox	13, 675	2	27, 350
Cross fox	20, 369	3	61, 107	Red fox	16, 920	1	16, 920
Red fox	20, 665	1	20, 665	Blue fox	11, 314	5	56, 570
Blue fox	62, 961	5	314, 805	Beaver	37, 409	5	187, 045
Beaver	428	5	2, 140	Marten	918	4	3, 672
1798-1821			13, 314, 058	1868-1870			3, 743, 206
Sea otter	80, 644	100	8, 064, 400	Sea otter	12, 208	100	1, 220, 800
Fur seal	1, 767, 340	2	3, 534, 680	Fur seal	214, 461	10	2, 144, 610
Land otter	17, 768	5	88, 840	Land otter	6, 867	5	31, 835
Black fox	15, 112	20	302, 240	Black fox	1, 847	20	36, 940
Cross fox	24, 535	2	49, 070	Cross fox	14, 398	2	28, 796
Red fox	35, 456	1	35, 456	Red fox	16, 461	1	16, 461
Blue fox	50, 934	6	305, 604	Blue fox	16, 263	5	81, 315
Beaver	50, 001	5	280, 005	Beaver	17, 041	5	85, 205
Marten	17, 921	3	53, 763	Marten	24, 311	4	97, 244
1822-1841			6, 561, 351	1871-1880			21, 049, 940
Sea otter	25, 446	100	2, 544, 600	Sea otter	40, 283	100	4, 028, 300
Fur seal	458, 502	5	2, 292, 510	Fur seal	1, 033, 832	15	15, 507, 480
Land otter	20, 442	5	147, 210	Land otter	27, 730	5	138, 650
Black fox	18, 783	20	375, 660	Black fox	20, 100	30	603, 000
Cross fox	39, 312	2	78, 624	Cross fox	37, 308	2	74, 616
Red fox	60, 579	1	60, 579	Red fox	47, 298	1	47, 298
Blue fox	41, 000	5	205, 000	Blue fox	23, 615	5	118, 075
Beaver	162, 034	5	810, 170	Beaver	41, 217	5	206, 085
Marten	15, 060	3	46, 998	Marten	81, 609	4	326, 436
1842-1862			7, 801, 195	1881-1890			23, 725, 783
Sea otter	25, 899	100	2, 589, 900	Sea otter	47, 842	100	4, 784, 200
Fur seal	372, 804	8	2, 983, 152	Fur seal	1, 162, 806	15	17, 442, 090
Land otter	170, 473	5	852, 365	Land otter	27, 730	5	138, 650
Black fox	15, 341	20	306, 820	Black fox	15, 910	25	397, 750
Cross fox	20, 650	2	59, 300	Cross fox	53, 151	2	106, 302
Red fox	66, 860	1	66, 860	Red fox	62, 718	1	62, 718
Blue fox	20, 130	5	100, 650	Blue fox	21, 314	5	106, 570
Beaver	157, 484	5	787, 420	Beaver	60, 940	5	304, 700
Marten	13, 682	4	54, 728	Marten	127, 601	3	332, 803

VALUE OF FURS SHIPPED FROM RUSSIAN AMERICA AND ALASKA.

Russian:

1745-1797	\$13, 288, 720
1798-1821	13, 314, 058
1822-1841	6, 561, 351
1842-1862	7, 801, 195
1863-1867	3, 618, 717
	<u>44, 584, 041</u>

American:

1868-1870	3, 743, 206
1871-1880	21, 049, 940
1881-1890	23, 725, 783
	<u>48, 518, 929</u>

Total

Sea otter	36, 365, 400
Fur seal	47, 005, 750

Total

NUMBER OF ALASKA FUR SEAL SKINS SOLD IN LONDON.

YEARS.	Aggregate.	SALTED.		Dried.	Dressed.	YEARS.	Aggregate.	SALTED.		Dried.	Dressed.
		Alaska Commercial Company.	Other traders.					Alaska Commercial Company.	Other traders.		
Total	2,411,000	1,801,052	412,254	50,288	87,505	1878.....	103,521	99,911	204	912	2,434
1868.....	134,306	.....	132,225	2,141	.....	1879.....	115,563	100,036	12,212	918	2,307
1869.....	45,746	.....	44,075	1,671	.....	1880.....	113,062	100,161	8,939	.....	4,562
1870.....	10,649	9,905	.....	684	.....	1881.....	116,494	99,921	9,997	680	5,890
1871.....	113,301	100,896	.....	12,495	.....	1882.....	123,307	100,100	11,727	321	11,150
1872.....	112,595	90,283	1,029	14,584	000	1883.....	85,008	75,914	2,319	390	6,385
1873.....	102,170	101,248	.....	891	40	1884.....	120,029	99,887	9,242	785	10,116
1874.....	97,963	90,150	4,949	2,772	122	1885.....	119,984	99,719	2,078	1,520	16,667
1875.....	103,209	99,034	1,646	1,351	578	1886.....	133,885	99,910	17,900	979	15,087
1876.....	94,364	90,267	2,042	993	1,002	1887.....	143,279	99,940	36,907	2,843	3,589
1877.....	77,355	75,410	.....	1,173	772	1888.....	139,908	100,000	36,816	1,252	1,920
						1889.....	141,808	100,000	39,563	228	2,017
						1890.....	62,714	21,700	38,315	609	2,000

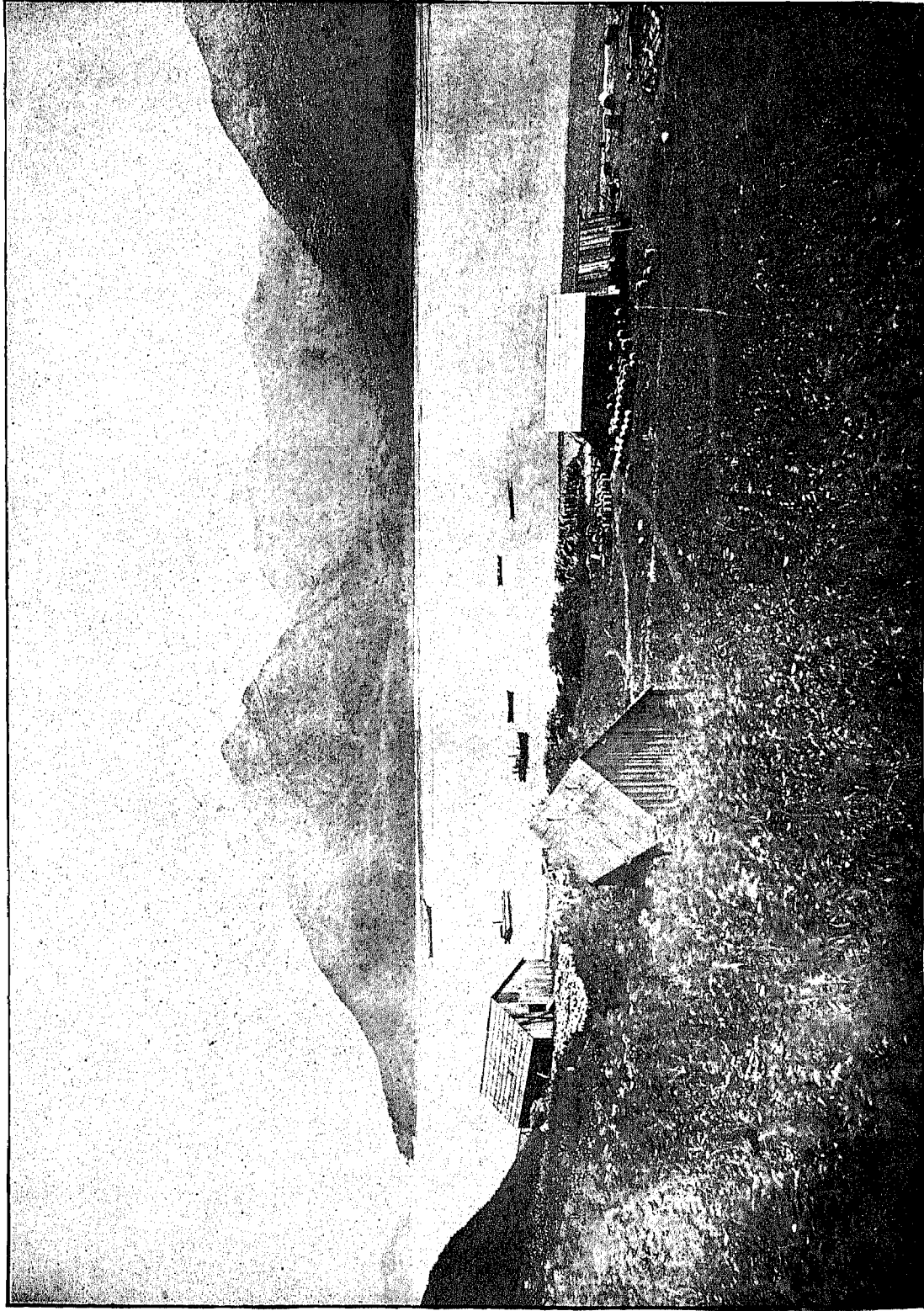
FUR SEAL SKINS LANDED AT VICTORIA, BRITISH COLUMBIA, IN 1890.

(From records of her Britannic Majesty's customhouse.)

DATES.	Name of vessel.	Number of skins.	Where caught.	DATES.	Name of vessel.	Number of skins.	Where caught.
Total		35,402		September 9..	A. C. Moore.....	635	North Pacific ocean and Bering sea.
March 21.....	A. C. Moore.....	91	North Pacific ocean and Bering sea.	September 10.	Walter L. Rich	633	Do.
March 21.....	Mary Ellen	115	Straits of Fuca.	September 11.	Adele.....	431	Do.
March 31.....	Pathfinder.....	144	North Pacific ocean and Bering sea.	September 15.	Kate.....	.....	Oil from Bering sea.
April 11.....	San Diego.....	84	Straits of Fuca.	September 15.	E. B. Marvin.....	918	Bering sea.
April 14.....	W. L. Rich	122	North Pacific ocean and Bering sea.	September 15.	Pioneer.....	984	North Pacific ocean and Bering sea.
April 16.....	Sapphire.....	416	North Pacific ocean.	September 16.	Favorita.....	1,284	Bering sea.
April 21.....	City of San Diego...	18	Straits of Fuca.	September 17.	Ocean Belle.....	480	Do.
April 22.....	Mollie Adams	368	North Pacific ocean and Bering sea.	September 19.	Geo. R. White	400	Do.
April 23.....	Sea Lion.....	255	Straits of Fuca.	September 19.	Teresa.....	450	Do.
April 26.....	Juanita.....	103	Northwest coast.	September 20.	Maggie Mo	1,948	Do.
April 26.....	Penelope.....	150	North Pacific ocean.	September 24.	Juanita.....	777	Pacific ocean and Bering sea.
April 30.....	Aurora.....	187	North Pacific ocean and Bering sea.	September 24.	W. P. Sayward.....	458	Bering sea.
May 9.....	Venture	150	Northwest coast.	September 27.	Beatrice	857	Do.
June 25.....	Dispatch.....	900	West coast.	September 29.	Mary Ellen	564	Bering sea for American schooner Venture.
July 28.....	Mischief.....	12,596	North Pacific ocean (transshipment from Sand point).	September 29.	Penelope.....	1,050	Bering sea.
July 30.....	Aurora.....	2,024	North Pacific ocean.	September 30.	Minnie	1,477	Do.
August 28.....	Mattie Dyer	74	Do.	October 1.....	Sea Lion.....	744	Do.
September 5..	Mary Taylor.....	579	North Pacific ocean and Bering sea.	October 7.....	San Diego	579	North Pacific ocean and Bering sea.
September 5..	Triumph.....	473	Bering sea.	October 7.....	C. H. Tupper	765	Bering sea.
September 5..	Sapphire.....	746	Do.	November 21.	Triumph.....	83	North Pacific ocean and Bering sea.
				December 18.	Adele.....	380	Result of raid on Pribilof islands.

Eleventh Census of the United States.
Robert P. Porter, Superintendent.

Alaska.



SALMON SALTERY, CENTRAL ALASKA.

CHAPTER XIV.

THE FISHERIES OF ALASKA.

THE SALMON INDUSTRY.

Next in value to the fur trade of Alaska stands the salmon industry, which has been developed to an astonishing degree during the last decade.

Under the Russian régime a few isolated instances have been recorded of shipments of salted salmon from Alaska to foreign ports, chiefly to the Sandwich islands, and a few cargoes to California. After the transfer of the Russian possessions to the United States the immense numbers of food fishes crowding the waters and rivers of Alaska were at first almost totally neglected. The rush of adventurers and capitalists immediately following the sale of the country was directed solely in search of furs, the only exception being the cod fishery conducted about the Shumagin islands and in Bering sea by two San Francisco firms. Both of these firms have carried on this industry without interruption from the year 1867 to the present day. Of this class of fish products more detail is given further on.

The first attempt at canning salmon in Alaska was made in the year 1878 under the auspices of the Cutting Packing Company, of San Francisco, which established a salmon cannery at a place named Old Sitka, situated about 6 miles to the northward of the present settlement of that name. This enterprise was immediately followed by the firm of Sisson, Wallace & Co., of San Francisco, which set up a salmon-canning establishment at Klawak, on the west coast of Prince of Wales island. For a period of 4 years in succession the total pack of these 2 establishments did not exceed 17,000 cases per annum, which were sold at a comparatively low figure, owing to the difficulties met with in overcoming the unwillingness of buyers at that time to purchase anything but Columbia river salmon. In the year 1882 another canning establishment sprang up in southwestern Alaska, swelling the annual pack of that year to nearly 25,000 cases, all of which sold at somewhat less than \$4 per case.

In the year 1883 the first canning establishment west of Sitka was located on Kadiak island, which resulted in nearly doubling the output of the year before. At the same time prices began to mend, and the attention of dealers and canners was directed to the possibilities of Alaska as a basis of the salmon supply on an extensive scale. In 1884 2 more canneries were established, and the annual pack was greatly increased. In 1885 the pack exceeded but little that of the preceding year, but from that time forth to the present day the pack has increased rapidly every succeeding year, until in 1889 it reached the enormous quantity of 696,732 cases, representing a value of \$2,786,929.

The salmon of Alaska have not thus far been known to frequent any large river in such quantities as has made the Columbia famous for its wealth of fish. The salmon streams as a rule are small, but few of them affording a supply adequate to the wants of more than 1 or 2 canning establishments. The only exceptions to this rule now known to exist are the Karluk river, a narrow stream not above 50 feet wide, which supplies 6 or 7 of the large canneries, with a capacity of from 200,000 to 300,000 cases, and the Nushagak river, from the waters of which 4 canning establishments extract annually from 25,000 to 35,000 cases each. The salmon canneries located on the Kassilof and Kenai rivers, on Cook inlet, have not thus far reported a total pack exceeding 40,000 cases per annum. On Prince William sound, in the vicinity of the Copper river mouths, 3 canneries have been erected, with a combined output of about 40,000 cases per annum. All the salmon canneries now in operation in southeastern Alaska are of limited capacity, with an annual output of from 4,000 to 10,000 cases each.

The fact that the most diligent search for new cannery sites prosecuted during the last 4 or 5 years has failed to reveal any new discoveries in that line seems to justify the conclusion that the "high-water mark" of this industry has been reached for the present, and that the annual output will not probably be increased to any considerable extent until some way is found to get at the wonderful quantities of the finest salmon that crowd the vast channels of the Yukon river each succeeding season.

The prosecution of the salmon industry in Alaska is connected with great expense, partly owing to the great distances intervening between the field of operations and the bases of supplies, which greatly increased the original outlay as well as the working expenditure. Another item of great expense to Alaska's salmon packers is the necessity for carrying up skilled as well as common laborers to the canneries every year, which implies 2 voyages on sailing vessels extending over a period of from 3 to 4 weeks, during which time these laborers must receive pay without doing any work whatever.

The salmon fishery of Alaska resembles the fur trade in so far as it is conducted by corporations and individuals who do not reside within the territory, and that both are carried on with outside capital; but while the expenditure of money in the shape of wages and payment for furs on the part of the firms engaged in the fur trade is to a great extent distributed among native and other residents of Alaska, the vast sums paid out every season by the canning companies fall almost entirely into the hands of nonresidents of the territory, both white and Chinese. The number of native laborers employed in any of the fishing establishments is insignificant compared to that of imported laborers.

The salmon and cod fishing industries of Alaska give employment to a large number of men, but thus far few of the fishermen, packers, and sailors engaged in the work have become permanent residents of the country, which is being rapidly drained of its principal resources without even getting a partial return in wages paid for labor. In southeastern Alaska alone the figures are a little more favorable to the territory, as there a large proportion of the fishermen are white residents or natives. In this district there are 27 fishing stations, and among them 10 salmon canneries. The value of the permanent improvements at these stations, consisting of buildings and plant, is \$309,005 (buildings, \$126,475; plant, \$182,530). They employ 1,000 men for an average period of 63 days. Of these 1,000 men 312 are Chinese, who receive on an average 45 cents per case of salmon put up. On an output for the season of 116,716 cases they have received \$52,522, or \$168 for each man.

The white and native fishermen and packers in this district averaged \$48.50 per month for the same period of time. They numbered 491, and consequently received \$51,555, or \$105 each for the season. The majority of these men were employed in small salting stations. The value of the total product of these stations was \$505,122.

In western or rather central Alaska there are 26 canneries, with buildings, boats, and machinery, valued at \$1,584,500, and an annual working plant worth nearly \$1,000,000 more (\$957,500). In this section also the Chinese packers, who number 1,837, receive on an average 45 cents per case, which, on a pack of 515,271 cases, amounts to \$231,871.95, or \$126 for each man for the season. The average time consumed, owing to the long voyage in sailing vessels from and to San Francisco, is from 5 to 6 months.

The white fishermen and laborers employed in these canneries, numbering about 1,559, averaged about \$30 per month (with their board) for 6 months, and \$10 per thousand fish, which increased their average earnings to \$275 for the season, or a total approaching \$500,000.

The value of the pack of salmon for the season in this section of Alaska, including 9,267 barrels of salted salmon, is \$2,142,487.

The fishermen of the central Alaskan canning district are largely composed of Italians and Greeks, and where they congregate by the thousand, as is the case at Karluk, with its 5 magnificent canneries, they make up an unruly, lawless element of society; but there is no provision made by the government for keeping them in check any more than the Chinese, who equal them in number and openly violate the law by peddling the vilest kind of liquor, known as Chinese gin. At this point 24 gangs of 16 men each were scining 6 days of the week throughout the season, and succeeded in securing nearly 3,000,000 fish.

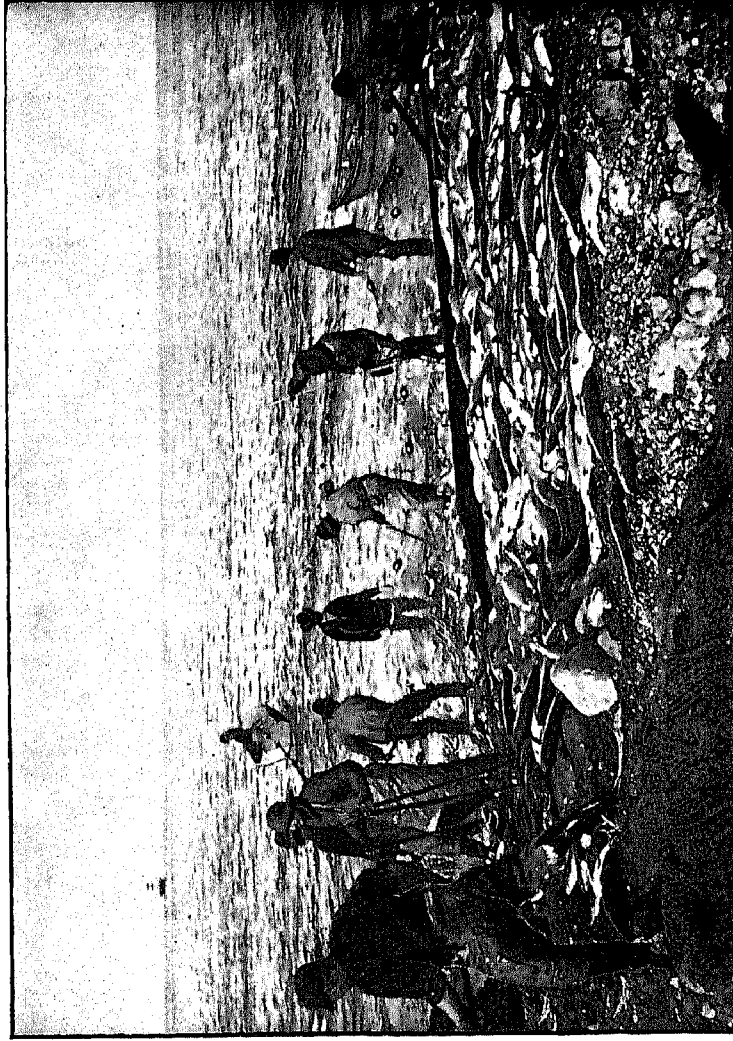
Thus far only 2 species of the Alaska salmon have obtained a permanent footing in the markets of the world: the so-called redfish, which is small, but with flesh of a deep red color, and the king salmon, a large fish somewhat lighter in color and very fat. 3 or 4 other kinds of salmon are found in the waters of Alaska in greater numbers than the 2 above-named species, but though of delicate flavor and fatter than the redfish, all attempts to introduce them, together with other kinds of salmon, have resulted only in a general lowering of prices.

In connection with the salmon industry is appended one table of the shipments of canned salmon from the year 1878, the year of the first inauguration of the salmon canning industry in southeastern Alaska, to 1890, inclusive, and another showing the shipments of salted salmon from 1881 to 1890 and their estimated value.

The statements on the following pages show the receipts of both canned and salted salmon from Alaska as the cargoes arrived in San Francisco.

Eleventh Census of the United States,
Robert P. Porter, Superintendent.

Alaska.



HAULING A SALMON SEINE

SHIPMENTS OF CANNED SALMON FROM ALASKA FOR 1890.

DATES.	From—	Number of cases.	DATES.	From—	Number of cases.
Total		642,175	September 11 ..	Karluk	9,987
June 3.....	Wrangell	1,000	September 11 ..	do	1,869
June 3.....	Burroughs bay	2	September 11 ..	Afognak	2
June 14.....	Cook inlet	1,149	September 12 ..	Thin point	7,039
June 18.....	Labouchere bay	1,300	September 14 ..	Cook inlet	9,777
July 5.....	Pyramid harbor	1	September 15 ..	do	1,650
July 5.....	Chilkat	500	September 15 ..	Kuni bay	2,533
July 5.....	do	4	September 15 ..	Chilkat	2,884
July 5.....	Labouchere bay	2,000	September 15 ..	Pyramid harbor	2,348
July 5.....	Loring	1,617	September 15 ..	Labouchere bay	3,200
July 10.....	Kayak island	1,302	September 15 ..	Loring	20
July 17.....	Kuni bay	1,051	September 22 ..	Kadiak	12,976
July 17.....	Chilkat	2,520	September 22 ..	do	9,450
July 17.....	Pyramid harbor	2,832	September 22 ..	do	1,537
July 17.....	Labouchere bay	2,500	September 22 ..	Nushagak	15,850
July 18.....	Karluk	5,357	September 22 ..	Kadiak	1,499
July 18.....	Prince William sound	5,116	September 29 ..	do	500
July 24.....	Karluk	9,635	October 1	Uyak bay	12,500
July 24.....	do	865	October 4	Afognak	26,300
July 24.....	do	1,001	October 4	do	8,447
July 24.....	do	500	October 4	Klawak	10,188
July 29.....	Nushagak	10,853	October 4	do	61
August 8.....	Pyramid harbor	3,230	October 8	Karluk	15,681
August 8.....	Chilkat	2,672	October 8	Kadiak	2,303
August 8.....	Loring	4,180	October 13	Kuni bay	2,123
August 8.....	Burroughs bay	2,213	October 13	Bartlett bay	4,361
August 12.....	Bristol bay	19,240	October 13	Pyramid harbor	1,308
August 12.....	do	26,100	October 13	Chilkat	4,874
August 12.....	do	12,000	October 13	do	8,026
August 12.....	do	3,000	October 13	Labouchere bay	520
August 14.....	Nushagak	24,326	October 13	Pyramid harbor	4
August 14.....	do	5,000	October 13	Wrangell	245
August 14.....	Karluk	9,001	October 13	Labouchere bay	1,041
August 14.....	do	3,002	October 13	Burroughs bay	2,594
August 14.....	do	1,223	October 14	Chilkat	2,283
August 16.....	Bartlett bay	1,071	October 14	Pyramid harbor	161
August 16.....	Kuni bay	880	October 14	Loring	2,814
August 16.....	Chilkat	2,599	October 14	Karluk	21,762
August 16.....	do	3,014	October 20	do	824
August 16.....	Pyramid harbor	2,228	October 20	Point Ellis	34
August 16.....	Labouchere bay	2,217	October 23	Alitak bay	11,311
August 20.....	Cook inlet	15,905	October 25	do	14,918
August 26.....	Uyak	17,413	October 25	Odiak	4,200
August 27.....	Chignik bay	12,213	October 25	Karluk	4,118
September 1 ..	Bartlett bay	800	October 26	Uyak bay	2,008
September 1 ..	Point Ellis	1,809	October 26	Prince William sound	14,361
September 1 ..	Pyramid harbor	2,880	November 4	Karluk	8,000
September 1 ..	Chilkat	2,930	November 5	Kayak island	1,300
September 1 ..	Pyramid harbor	3,514	November 6	Bartlett bay	1,070
September 1 ..	Labouchere bay	1,550	November 6	Redoubt bay, Sitka	10,414
September 1 ..	Loring	3	November 15 ..	Kadiak	17,054
September 1 ..	Burroughs bay	2,000	November 18 ..	Karluk	7,675
September 1 ..	Loring	1,539	November 24 ..	Loring	2,663
September 1 ..	Chignik bay	9,266	November 24 ..	Yess bay	3,823
September 1 ..	do	9,266	December 1	Chignik bay	2,250
September 1 ..	do	9,266	December 2	Loring	12
September 2 ..	Karluk	10,250	December 11 ..	Uyak bay	2,427
September 4 ..	Kayak island	6,250	December 11 ..	do	1,988
September 5 ..	Karluk	5,200	December 11 ..	do	3,072
September 5 ..	do	5,585	December 11 ..	do	2,416
September 5 ..	do	808	December 11 ..	do	4,366
September 5 ..	do	7,680	December 11 ..	do	5,731

SHIPMENTS OF SALTED SALMON FROM ALASKA FOR 1890.

DATES.	From—	Number of barrels.	DATES.	From—	Number of barrels.
Total		18,039.00	September 15 ..	Loring.....	2,011.00
February 2	Nacket inlet	107.00	September 15 ..	Tongass narrows	87.00
March 5	Nichols bay	427.00	September 15 ..	Cook inlet	133.00
May 10	Kadiak	231.00	September 15 ..	do	27.00
May 20	Sand point	42.00	September 22 ..	Nushagak	1,416.00
July 5	Killisnoo	1.00	September 22 ..	Kadiak	3.00
July 17	Salmon bay	500.50	September 29 ..	do	0.50
July 21	Kadiak	57.00	September 29 ..	do	0.50
July 28	Sand point	68.00	October 4	do	440.00
July 29	Nushagak	103.00	October 4	Klawak	31.00
August 8	Killisnoo	353.00	October 8	Kadiak	86.00
August 8	Nichols bay	212.00	October 8	do	22.50
August 8	Hunters bay	48.00	October 8	do	10.50
August 8	do	150.00	October 11	Thin point	324.00
August 12	Bristol bay	342.00	October 11	do	164.00
August 12	do	243.00	October 13	Labouche bay	1.50
August 14	Karluk	9.00	October 13	Douglas island	107.00
August 14	Cook inlet	894.00	October 13	Killisnoo	49.00
August 16	Fish bay	20.00	October 13	Salmon bay	287.00
August 16	do	33.00	October 13	do	57.00
August 16	Killisnoo	34.00	October 14	Fish bay	40.00
August 16	Juneau	20.00	October 14	Pyramid harbor	1.00
August 18	do	21.50	October 14	do	1.00
August 18	Wrangell	62.00	October 14	Juneau	1.00
August 18	do	4.00	October 14	Lake bay	502.00
August 18	Salmon bay	195.00	October 14	do	256.00
August 18	do	215.50	October 14	Loring	0.50
August 18	do	0.25	October 14	Cordova bay	230.00
August 20	Uyak	2.00	October 14	Nichols bay	22.00
August 20	Cook inlet	6.00	October 14	do	133.00
September 1	Chignik bay	132.00	October 25	Ahtak bay	659.00
September 1	do	133.00	October 25	Karluk	240.00
September 1	do	133.00	October 26	Uyak bay	30.00
September 1	Killisnoo	256.00	November 6	Redoubt bay, Sitka	410.00
September 1	Pyramid harbor	1.00	November 15	Kadiak	380.00
September 1	do	1.00	November 18	Karluk	20.00
September 5	Karluk	101.00	November 18	Kadiak	49.00
September 5	do	1.00	November 24	Wrangell	40.00
September 5	do	1.50	November 24	do	120.00
September 5	do	1.00	November 24	Yess bay	20.00
September 11	do	310.00	December 2	Killisnoo	25.50
September 12	Ugashik	1,100.00	December 2	Sitka	1.00
September 12	Thin point	235.00	December 2	Lake bay	199.00
September 12	Bristol bay	900.00	December 2	Loring	0.25
September 15	Killisnoo	213.00	December 5	Karluk	218.00
September 15	do	6.00	December 16	Metlakatla	1.50
September 15	Pyramid harbor	1.00	December 16	do	17.00
September 15	Douglas island	2.00	December 16	do	56.00
September 15	Loring	13.00	December 16	do	53.00
September 15	do	104.00	December 16	do	20.50

The shipments of salmon from Alaska in 1890, as far as could be ascertained from the records of the United States customhouses on the Pacific coast, amounted to 642,175 cases and 18,039 barrels, consigned by 56 firms. A record was also found on the books of the Dominion customhouse at Vancouver, British Columbia, of the receipt of 11,000 cases of salmon from Alaska. Of this number 9,956 cases have been traced to the Alaska Salmon Packing and Fur Company, which would increase the output of that firm for the year 1890 to 22,781.

TABLE SHOWING THE PACK OF CANNED SALMON IN ALASKA FROM 1878 TO 1890.

YEARS.	Canned salmon. (Cases.)	Estimated value.	YEARS.	Canned salmon. (Cases.)	Estimated value.
Total	2,252,124	\$9,008,497	1884.....	66,840	\$237,360
1878.....	14,854	50,416	1885.....	60,100	276,400
1879.....	12,500	50,240	1886.....	120,735	506,940
1880.....	13,198	52,792	1887.....	176,664	702,656
1881.....	16,719	66,876	1888.....	350,830	1,493,356
1882.....	24,652	98,008	1889.....	600,732	2,786,920
1883.....	42,056	168,224	1890.....	642,175	2,568,700

TABLE SHOWING THE SALTED SALMON PACK IN ALASKA FROM 1881 TO 1890.

YEARS.	Salted salmon. (Barrels.)	Estimated value.	YEARS.	Salted salmon. (Barrels.)	Estimated value.
Total	67,072	\$603,548	1885.....	3,230	\$29,070
1881.....	1,760	15,840	1886.....	4,861	43,740
1882.....	5,800	53,010	1887.....	3,078	35,802
1883.....	7,251	65,250	1888.....	9,500	85,500
1884.....	6,106	54,954	1889.....	6,457	58,013
			1890.....	18,039	162,351

The reputed frugality of the celestial workman is often set in contrast with the wastefully extravagant habits of Caucasian laborers. Below is inserted a bill of supplies purchased by one of the Alaskan canning firms for 238 Chinese laborers in their employ. These provisions and luxuries were furnished upon a requisition of the Chinese contractor for the maintenance of his men for a period of from 5 to 6 months.

1,700 mats rice at \$3.75.....	\$6,375.00	10 sets China writing paper.....	\$6.00
700 pounds sperms at 30 cents.....	210.00	2 China counting boards.....	3.50
30 boxes China salted eggs at \$9.....	270.00	2 cases coal oil at \$4.50.....	9.00
453 pounds green ginger at 25 cents.....	114.50	4 hotel dish pans at \$2.50.....	10.00
229 pounds flatfish at 60 cents.....	137.40	4 hotel dish pans at \$2.....	8.00
354 pounds China fish at 40 cents.....	141.60	934 pounds ham at 20 cents.....	186.80
20 baskets bamboo shoots at \$3.50.....	70.00	30 boxes soda and sugar crackers.....	86.20
10 chests China tea at \$24.....	240.00	6 boxes cake.....	19.80
10 boxes China lily flour, 542 pounds, at 25 cents.....	135.50	10 boxes soap at \$2.....	20.00
22 boxes China oil fish at \$14.....	308.00	6 boxes China bowls at \$9.....	54.00
2 jars China onion at \$4.50.....	9.00	6 boxes China brown sugar, 374 pounds.....	44.94
16 barrels salted turnip, 1,466 pounds, at 10 cents.....	146.60	60 cases tomatoes at \$3.20.....	192.00
2 jars garlic at \$4.50.....	9.00	40 cases oysters at \$5.....	200.00
10 jars salted plums at \$4.75.....	47.50	30 boxes candles at \$3.10.....	93.00
14 boxes China bean cake at \$14.40.....	201.60	200 pounds Old Judge tobacco.....	200.00
36 boxes China nut oil at \$12.....	432.00	200 papers China tobacco.....	80.00
2 boxes China shellfish, 402 pounds, at 40 cents.....	160.80	120 pounds China sago at 9 cents.....	10.80
2 baskets China yams, 134 pounds, at 15 cents.....	20.10	40 pounds China crushed sugar at 19 cents.....	7.60
4 mats China beans at \$4.....	16.00	4 boxes China fruits, 320 pounds, at 13 cents.....	41.60
8 barrels China salted cabbage, 1,810 pounds, at 8½ cents.....	153.85	40 sets China dominos.....	20.00
10 boxes China bean sticks at \$12.....	120.00	14 boxes soap at \$1.35.....	18.90
132 pounds China mushroom at 80 cents.....	105.60	140 boxes China pills at 47 cents.....	65.80
10 jars China salted peas at \$4.50.....	45.00	20 pounds China dried oysters at 70 cents.....	14.00
8 jars China lemons at \$4.50.....	36.00	600 cigars at \$5.50 a hundred.....	33.00
300 pounds China salted fish at 15 cents.....	45.00	500 cigars at \$3 a hundred.....	15.00
40 pounds China seaweed at 80 cents.....	32.00	60 papers China pills at 45 cents.....	27.00
50 barrels salted pork, 11,100 pounds, at 18 cents.....	1,998.00	4 boxes China sugar cakes at \$8.....	32.00
6 jars China salted sperm eggs, 294 pounds, at 25 cents.....	73.50	10,000 China cakes at 1½ cents.....	150.00
2 mats white beans at \$4.....	8.00	1,000 China cakes at 1½ cents.....	15.00
2 sacks onions, 194 pounds, at 6 cents.....	11.64	2 cases China sugar cane.....	32.50
8 boxes salted China olives, 640 pounds, at 25 cents.....	160.00	2 boxes China plums, 160 pounds, at 13 cents.....	20.80
22 boxes China vermicelli, 1,650 pounds, at 25 cents.....	412.50	2 boxes China fruits, 140 pounds, at 13 cents.....	18.20
10 China hooks at 35 cents.....	3.50	4 boxes lobster at \$7.40.....	29.60
4 boxes China salted peas, 200 pounds, at 20 cents.....	40.00	120 papers sweetmeats at 28½ cents.....	34.20
6 baskets China salted cabbage, 455 pounds, at 20 cents.....	91.00	120 papers China chestnut flour at 14 cents.....	16.80
30 pounds China orange peel at 75 cents.....	22.50	24 pounds tobacco at 55 cents.....	13.20
4 sacks garlic, 260 pounds, at 25 cents.....	65.00	40 pounds tobacco at 31 cents.....	12.40
4 boxes China seaweed, 231 pounds, at 60 cents.....	138.60	22 pounds isinglass at 50 cents.....	11.00
20 pounds China dried oysters at 90 cents.....	18.00	90 pounds opium at \$13.50.....	1,215.00
12 boxes China sauce at \$4.80.....	57.60	40 pounds opium at \$7.60.....	304.00
6 boxes China dried cabbage, 357 pounds, at 25 cents.....	89.25	20 cases China wine at \$11.75.....	235.00
74 pounds China greens at 25 cents.....	18.50	12 boxes cigarettes.....	26.40
28 sacks of potatoes at \$2.....	56.00	48 cases gin.....	300.00
2 pieces ink at 25 cents.....	0.50	4 cases China wine.....	72.00
20 Chinese pens.....	2.00	Chinese merchandise.....	373.50
		Fresh pork.....	396.30
		Total.....	17,623.88

We find among these supplies articles of luxury and delicacies (at least from a Chinese standpoint) such as the most liberal employer would not provide for his white laborers. It is only necessary to point out the item of opium, amounting to \$1,519; 48 cases of gin, amounting to \$300; 24 cases of Chinese wine, amounting to over \$300; also tobacco, cigars, and cigarettes to the amount of nearly \$400. The amount of rice provided for these men, 1,700 mats of 50 pounds each, costing \$6,375, does not suggest the idea of short commons. The total cost of these stores is nearly \$18,000. The practice of employers varies so greatly as to making board and supplies a part of the compensation that very positive deductions as to the habits of the employed can not be made simply from a bill of supplies which might in one case be part of the compensation and in another purchasable by the wage earners, but the bill above has a suggestive value.

THE CODFISH INDUSTRY.

The cod-fishing firms permanently located in Alaska have 2 central stations in the Shumagin islands, each with improvements, wharves, etc., worth \$35,000. They have vessels valued at \$60,000 plying in Alaska only, and employ about 38 shore fishermen and 105 sailors at average wages of \$40 per month or \$27.50 per thousand fish for 8 months of the year.

A small portion of the fish is caught in the waters of the Alexander archipelago, and a large majority on the Shumagin, Sannak, and Bering sea codfish banks.

The catch for 1890 aggregated 506,000 fish, producing 760 tons of dried fish, valued at \$38,000.

Next to the salmon of Alaska the codfish stands foremost in quantity as well as in commercial importance. As already stated, the existence of codfish in Alaska was known in San Francisco previous to the transfer of the country. Early in the year 1868 Prof. George Davidson, of the United States Coast and Geodetic Survey, published a statement to the effect that soundings of Bering sea and the waters immediately adjoining indicated the existence of the largest submarine plateau yet known. In the eastern half of Bering sea soundings of less than 50 fathoms were found over an extent of almost 18,000 square miles. The extent of the banks in the Gulf of Alaska, between longitude 130° and 170° and latitude 54° and 60° north, had not been definitely determined, but it is probably equal to that of the banks of Bering sea.

In general terms it may be stated that codfish is found around the whole south shore of Alaska. The fish is quite abundant in many of the channels of the Alexander archipelago; it is found off Yakutat bay, somewhat inside of what whalers call the fair-weather ground, and along the southern and western shore of Kayak island and Prince William sound. The next codfish bank of any importance is the Portlock bank, located by the explorer of that name along the southeastern coast of the Kadiak group of islands with soundings of from 45 to 90 fathoms. Some distance to the southeast of Kadiak island, in latitude 56° and longitude 153°, there is another bank with soundings of from 22 to 28 fathoms. Still more to the southward is the Simeonof bank, between latitude 54° 45' and 54° 38' and longitude 158° and 158° 30', with soundings averaging 40 fathoms, while about 20 miles east-northeast of this bank a higher plateau is found with soundings of from 26 to 40 fathoms. The famous Shumagin banks are located around the islands of Nagai, Popof, and Unga within a short distance of the shores. The largest shipments of codfish from Alaska to San Francisco were made from here, and quite a large permanent population of Scandinavian fishermen and their families is springing up in the more sheltered nooks and corners of this archipelago.

A very prolific codfish bank was definitely located in the waters of Bering sea, immediately to the northwest of Unimak strait, during an exploration of the United States fish commission's steamer Albatross.

Though over 20 years have elapsed since the inauguration of this industry, it must still be considered in its infancy, as, owing to various circumstances, it is carried on altogether without regard to the abundant supply, solely in accordance with the demands of the local and very limited market on the Pacific coast of the American continent only.

A most careful investigation into the quality of the Shumagin-Alaskan cod, conducted under the auspices of the United States fish commission, shows no essential difference between this species and that of the north Atlantic. The facilities for the pursuit of the industry are far greater on the Pacific coast than they are on the Atlantic. The journey from San Francisco or Puget sound to the Shumagin banks is comparatively brief and very safe, and all the banks are within a few hours' run of sheltered and commodious harbors. It is evident that the great want of the Alaskan cod fisheries is not fish or safety to the fishing craft, but simply a demand for fish. An almost unlimited market, such as the New England fishermen enjoy, would whiten the waters of the Gulf of Alaska and Bering sea with sails of all descriptions.

The following is quoted from the "Report on the fisheries of the Pacific coast of the United States, by J. W. Collins" [for 1888], pages 99-105:

The fluctuations and vicissitudes of the Pacific cod fishery are due to several causes. For a long time one of the chief drawbacks was found in the lack of experience on the part of some of those conducting the business. Often they were deficient in the technical skill and knowledge required for properly curing the products landed from their vessels. Firms and individuals that entered into the trade without sufficient knowledge of its requirements soon became discouraged, as a rule, and dropped out of the business; only those with greater skill and more persistence continued the industry. Wilcox pertinently remarks that "those that remain have by long and sometimes by dear-bought experience thoroughly learned all the details of the business and have familiarized themselves with the needs".

Paradoxical as it may seem, for some years a season of exceptional success was often the cause of disaster. Large profits generally created a temporary "boom". Firms or individuals hastened to engage in the fishery. Frequently sufficient care was not exercised in selecting men and vessels. Generally the market was much overstocked at the close of the season. Prices dropped far below the point where they gave remunerative returns to investors. Too often the products could scarcely be sold at any price, because of the excess of supply over the demand. The result was necessarily disastrous, and those who had hastened to engage in an enterprise because others had been "lucky" usually abandoned it with the utmost precipitation, leaving the field only to those whose "luck" or experience enabled them to succeed under conditions that ruined or discouraged their competitors. The year 1869 is cited as a fair illustration of the above statements. Serious loss was caused that year by overproduction and improper methods of curing. As a consequence, hundreds of tons of spoiled fish were thrown into the sea. One cargo of 140 tons of cod was brought to San Francisco by a foreign vessel. A duty of half a cent per pound was paid on the fish, which, when opened, were in such a condition that the whole lot sold for only \$500. The fish were

shipped around Cape Horn to New York to be used for fertilizing purposes, but arrived in such an offensive condition that they could not be landed; they were taken outside of New York harbor and thrown into the sea.

The competition arising from the introduction of Atlantic cod in Western markets has possibly had some influence in causing fluctuations in the Pacific cod fishery. But I look upon this rather as the cause of the general decline noticeable in recent years than as a special reason for the variableness alluded to. It is now difficult to predict what may be the ultimate result of this competition, since so many factors are involved, any one of which may have a great influence. * * *

Compared with former years, when the fleet sometimes numbered upwards of 20 vessels and the products aggregated more than 2,000 tons, the Pacific cod fishery is now unimportant, while it appears at still greater disadvantage if compared with the great cod fishing industry of the Atlantic states. A particularly unfavorable change in its status took place between 1888 and 1889, as will be seen by reference to the historical notes and tabulated statements given elsewhere. Considered, however, from the standpoint of the needs of the population of the Pacific slope, the capital invested, the excellent curing stations, and the experience gained, the cod fishery is by no means an unimportant factor in the industries of the far west, and if not abandoned may ultimately attain a status that its present condition gives little reason to hope for.

According to Alexander, "Lynde & Hough were the only firm of San Francisco that had vessels actually engaged in fishing for cod in the season of 1889". They sent the barkentines Jane A. Falkenburg and Fremont to the Okhotsk sea (the former sailing May 23 and the latter May 6) and the schooners Dashing Wave and Arago to Alaskan waters. The barkentines both arrived home on the 25th of September. Their fares aggregated 327,000 fish, equal to 491 tons, valued at \$24,550. The combined catch of the two schooners amounted to 195,000 fish, weighing 293 tons, valued at \$14,650. These fish were caught about the Shumagin islands. The Dashing Wave landed two fares, the first on June 28 and the second October 8. The firm has a station at Sand point, Popof island, devoted to salmon fishing and outfitting; this is connected with the cod fishery only to the extent that the vessels can, if necessary, land their fares here and refit for another cruise with salt, dories, provisions, etc., which are kept for this purpose as well as for supplying the resident population. This sometimes saves a vessel from making the long trip to San Francisco and back in midsummer, when the fishery is at its height.

During 1889 the McCollam Fishing and Trading Company prosecuted the cod fishery from their shore stations as usual, and had employed the schooner Unga (of 20 tons and with a crew of 5 men) as a tender between stations, and the schooner Czar, which carried the products to market. The latter made 3 trips (sailing, respectively, February 11, May 2, and July 10, and arriving home April 16, June 25, and September 1) and brought home an aggregate of 325,000 fish, weighing 490 tons, with a value of \$24,500.

The total catch of cod for 1889 amounted to 847,000 fish, weighing 1,274 tons, with a first value of \$63,700. The business employed 6 vessels (including 2 used as tenders and freighters), with an aggregate registered tonnage of 1,097.68, and valued at \$51,000.

There have always been a greater or less number of New England fishermen employed in the Pacific cod fishery since it became a recognized industry. In the early days, when the fishery was most lucrative and important, it was not uncommon for whole crews of trained fishermen to sail for California on schooners purchased at New England ports for the trade. These men were peculiarly fitted to wield an important influence on the industry, for they carried to the Pacific a skill gained by years of experience in the Atlantic fisheries and hardihood and daring unexcelled. But the business has attracted men of various nationalities, particularly Europeans, and Americans are now, and for several years have been, in a decided minority. Thus, in 1888, out of a crew list of 188, only 30 were Americans, 147 were Scandinavians, 8 were born under the British flag, and 3 were Portuguese. There appears to have been even a greater diversity in 1889. Of 35 fishermen selected at random Alexander states 9 were Americans, 12 Scandinavians, 6 Portuguese, 4 Russian-Finns, 2 Germans, and 2 Irish.

The system of remuneration differs considerably from that generally adopted on the Atlantic coast, resembling the latter only to the extent that, with few exceptions, the amount earned by each fisherman depends upon the quantity of fish taken by him. Some of the men who have special duties receive a monthly stipend and are sometimes paid, in addition, whatever they can earn by fishing. The captain of a cod-fishing vessel going to Okhotsk sea usually receives a stated sum (as agreed upon between him and the owner) per 1,000 fish landed, or he may be hired by the month. The mates, of whom there are generally 3 on the larger vessels, fish in dories the same as the regular fishermen, and are paid a certain amount per 1,000 for their individual catch, the amount being graded according to their respective official positions, and being considerably more than is paid to the crew. Sometimes they are paid a certain amount per month and the same rate for the fish as the ordinary fishermen get.

The fishermen proper, those who hold no official position and devote themselves exclusively to catching fish while on the banks, receive from \$20 to \$25 per 1,000 cod for all fish which measure 28 inches in length from tip of snout to end of tail. Cod 26 inches long and upward, but less than 28 inches, count 2 for 1; those less than 26 inches are not counted. Each man's catch is counted and credited to him as he comes on board, and several trips may be made each day if fish are plenty, since those who go in the dories have nothing to do with dressing or salting.

On each of the large vessels are 8 men, comprising two gangs, whose special duty is to dress and salt the catch. These include 2 splitters, 2 throwers, 2 headers or gutters, and 2 salters. These men remain on the vessel and receive monthly wages, ranging from \$15 to \$50, or more, the amount paid depending upon the skill and responsibility of the individual. They also have the privilege of fishing over the vessel's rail when not engaged in other duties. They are paid the same rates for their catch as the regular fishermen, and occasionally add considerably to their earnings.

Each vessel has a "watchman", who is paid monthly wages, and, like the dressing gang, receives additional pay for fish caught over the vessel's side. On passages his duties are those of a common sailor; but on the fishing banks no anchor watch is kept by other members of the crew, who sleep at stated hours (that can hardly be called night in high northern latitudes), while the watchman remains alone on deck and keeps the lookout. He thus often has exceptional opportunities for fishing, and two instances are cited when watchmen were "high line", having caught more fish than anyone else on board.

The vessel furnishes all boats, fishing gear, bait (if any is carried), and provisions free of any expense to the crew. Clothing, tobacco, or other supplies are advanced from the outfitting stores before sailing, or furnished from the "slop chest" during the voyage, the price of these being deducted from the earnings of each man at the final settlement.

The lay of the Alaskan stations differs slightly from that above described. The fishermen are paid from \$25 to \$30 per 1,000 for all their fish, but with the understanding that they must dress and salt all their catch. The system of measuring and counting differs only in the size of the fish from that in vogue on the vessels; the fish are salted in the warehouses. It has been given in evidence before the Senate Committee on Relations with Canada that \$27.50 is the price paid by the McCollam Fishing and Trading Company, with the understanding that "counts" should be no less than 26 inches in length; those from 24 to 26 inches to be counted 2 for 1, and all less than 24 inches long to be thrown away. Each station is under the control of an agent of the company that operates it, and his relations to the men are the same as those of the captain of a vessel. He superintends their work, keeps the record of their catch, and furnishes them with such supplies as they may need from the company's store. The fishermen live in comfortable quarters on shore and are

provided by the company with everything required for fishing, except gear (including trawl lines), which is paid for at a price fixed upon when the men ship for the season. This rule has been adopted to insure greater care for the gear on the part of the fishermen, but it has not been found necessary on vessels fishing at the Okhotsk sea and Bering sea, where hand lines only are employed.

On the vessels fishing in Alaskan waters, according to Tanner—

The captain is paid a stated sum per month, and has no share in the cargo. The mate receives a monthly salary and also a certain sum for every 1,000 fish caught. Each of the crew receives \$25 per 1,000 fish; splitters, \$50 per month; salters, \$40 per month; cooks, \$60 per month. On the return from a trip the crew has nothing more to do with the vessel, taking no part in the discharging of the cargo, which is done entirely at the expense of the owners. The cod livers are never saved, and a profitable portion of the fish is thereby thrown away.

I have been told that a system similar to the above has at times been adopted on vessels going to the Okhotsk sea.

Mention has been made of the fact, an important one so far as the welfare of the men is concerned, that vessels fishing off the coast of Alaska can refit at the shore stations when necessary. Those fishing at the Okhotsk are not so favorably situated; the fishing grounds are 10 to 40 miles from land, usually off the mouths of small rivers or creeks that empty into barred and inaccessible harbors; the vessels must ride out gales or scud away to sea; wood and water are generally procurable, and occasionally some poor beef or a bear may be obtained, but other provisions or supplies are not available on that bleak and barren coast.

Hand lines are exclusively used in the Okhotsk and Bering seas, and the system of "dory fishing" is also in vogue. This method is precisely similar to the dory hand-line fishing for cod on the banks of the western Atlantic. A large number of small dories are carried by each vessel, and a single fisherman goes in each boat. Standing in the center of the dory (which is only about 13 feet long on the bottom and a little over 16 feet on top), he throws out a line on each side, and the fish taken are put into the ends of the craft until she is loaded, when they are taken to the vessel and pitched on deck for dressing. The time occupied in loading a dory varies, according to the abundance of fish, from a few hours to a whole day. Sometimes only scattering cod can be taken, not enough to half fill a boat, though this is comparatively rare on Pacific fishing grounds. (a)

It has been found impracticable to set trawls in Bering sea. The schooner Constitution tried to use them in 1887, and the attempt was repeated by the Arago in 1888; but no satisfactory results were obtained, because of the great abundance of sea fleas (amphipod crustaceans) on the bottom. These active scavengers not only swarmed upon the bait but they injured or devoured the cod before the trawls could be hauled.

The hand lines used are similar to those employed in dory hand-line fishing on the Atlantic, but rigged with less care and neatness. Captain Tanner says:

The fishing leads are made by the crews of the vessels, and therefore do not compare in finish with those of New England. The lines are not tarred, and soon show signs of wear. Patent swivels are apparently unknown; none of the crew of the Arago had ever seen or used them; but after the method of working them and their advantages had been explained, the fishermen expressed their intention of giving them a trial next year. The dories correspond in shape and size with those used upon the eastern coast, the only perceptible difference being that the stem, timbers, and planking are a trifle heavier. They are manufactured in San Francisco by Lynde & Hough. Galvanized iron rowlocks are used instead of thole pins.

Shore cod fishing is wholly carried on in dories, this method bringing the best returns for the money invested. It would be impracticable to use vessels in this fishery, as the cod feed and school so close to the harbors and coast that dories can make several trips daily to the fishing grounds. This method is successfully followed throughout the year, and in 1889 gave employment to 33 men. The winter catch is salted in kech, in the warehouses and held there until spring, when the freighter arrives to carry the fish to market.

Both trawls and hand lines are used, the former more extensively. The trawls are like those used in the Atlantic cod fishery. The natives at Unalaska have the ordinary type of steel hook for cod fishing, though they still prefer the wooden hooks made by themselves for halibut fishing. Crude and primitive as these hooks are, I am assured by competent authority that they are very effective in catching halibut. Any available material serves the natives as a line for cod fishing; it may be only pieces of old cord knotted together, or a piece of sail or salmon twine, but sometimes cod line is used. Small iron bolts, spikes, or pieces of lead are preferred for sinkers, but stones also serve for this purpose.

Writing of the fisheries at Pirate cove, which may be taken as fairly representative of all the Alaskan stations, Captain Tanner remarks:

Cod fishing is now carried on in the vicinity of this harbor almost exclusively by means of dories, only 1 vessel having been engaged here in actual fishing during the present season. Most of the schooners had been sold, and those retained are used for freighting. The grounds resorted to are all within a short distance of the harbor, where dories are more convenient than larger craft. Trawls are chiefly employed, and during good weather they are hauled two and three times a day, but the fish are not dressed until the last haul for the day has been made. Cod fishing continues throughout the year. In summer, when the salmon are running, cod are not abundant, but they reappear in incredible numbers as soon as the salmon leave. During the winter strong southeasterly gales may prevent the hauling of the trawls for a number of days at a time, but there is no period of the year when they can not be used at least several times a week. This is in marked contrast with the climate of the Grand and Western banks off the Atlantic coast, some 10 degrees farther south, where the fishing vessels are often compelled to lie to for a week and sometimes for a fortnight with their dories lashed upon the deck.

Salmon are extensively used for bait, particularly in the Okhotsk sea. But halibut, herring, sculpins, flounders, and clams are employed for this purpose and answer well, though less attractive than salmon. (b) According to Dr. Bean the Alaska pollock "is one of the best baits known for cod". He also says that the Atka mackerel (*Pleurogrammus monopterygius*) possesses rare worth as a bait for cod, while the cusk, a species still rare in museums, forms an element in the bait supply for cod at the Shumagins. He also mentions the hant (*Ammodytes personatus*), which is extremely abundant in most parts of Alaska, and the capelin (*Mallotus villosus*), which is universal and abundant throughout the territory, as very important factors in the bait supply for the cod fishery of that region. The herring (*Clupea mirabilis*) is "invaluable as bait". (c)

MISCELLANEOUS FISH.

The fish next in importance to the codfish in Alaskan waters is the halibut, which is found in great numbers all along the coast and inside channels of the Alexander archipelago, on nearly all soundings of the shore line of the Gulf of Alaska and the Aleutian islands, and to a limited extent in the eastern part of Bering sea. This fish forms a great staple for consumption by natives, who eat it both fresh and dried. The only shipments of halibut from Alaska comprise a few thousand boxes of smoked fish put up in southeastern Alaska. This is a delicious

a Captain Slocum says that even the inexperienced men he had on the Pato, none of whom had previously seen a codfish, easily caught an average of 500 fish per day (earning \$12.50) when the fishing was best.

b Those fishing in Bering sea usually take a few herring to begin with, after which halibut are exclusively used for bait.

c "The Fishery Resources and Fishing Grounds of Alaska", by Tarleton H. Bean, Section III, "Fisheries and Fishery Industries of the United States", pages 81, 82, and 85.

article of food, which sells at from 9 to 12½ cents per pound, but for this article also the demand is exceedingly limited.

Immense shoals of herring visit the bays and estuaries of Alaska at various seasons of the year, and they form an important item in the food supply of the natives wherever this fish is found. The Alaska herring varies in size and quality in different localities. The largest are probably found in the waters surrounding the Aleutian islands and the Kadiak group; the smallest of the species exist in the waters of Prince William sound, and the greatest number are found to frequent the inland channels and bays of the Alexander archipelago. In this region alone has any attempt been made at utilizing this fish for commercial purposes. At Killisnoo, on the west coast of Admiralty island, the Northwest Trading Company, an Oregon corporation, has maintained for more than 10 years a herring fishery, the total catch of which is converted into oil of an excellent quality, and a fish fertilizer, which is shipped chiefly to the Sandwich islands.

The natives consume but a small fraction of the herring catch in fresh condition, most of it being dried for winter stores, while the spawn, which is gathered in great quantities, is either dried or preserved in oil. The shipments of salted herring from Alaska have not been of sufficient magnitude to secure for this article any quotation in the market.

In many parts of the Alexander archipelago, and in Prince William sound, dogfish are known to exist in immense numbers, but thus far no efforts have been made to make a business of extracting the valuable oil of this fish for shipment. At one of the canning establishments near the mouth of the Copper river the first attempt in this direction has been inaugurated within the season just passed, but of this venture no results have as yet been reported.

The eulachon or candlefish, a very oily species of smelt, frequents the streams emptying into the waters of southeastern Alaska in immense numbers. It is also found to a more limited extent in the waters of Cook inlet, Prince William sound, and on the south coast of the Alaska peninsula. Cooked fresh, this little fish makes a delicious article of diet, and is not at all to be despised when salted. Nevertheless, shipments of eulachon from Alaska have been of rare occurrence and insignificant in quantity, nearly the whole catch being consumed by the natives, fresh, dried, or in the shape of oil. In the latter article an extensive local trade is carried on among the Thlingit tribes of the Alexander archipelago, who pack the oil in wooden boxes after extracting it by means of the primitive process of boiling the whole fish in wooden troughs or canoes by throwing into the receptacles stones previously brought to a red heat. The oil is then skimmed off with immense wooden ladles. It is doubtful whether the supply of this fish would allow of anything beyond the present immense local consumption.

Among the marine mammals, aside from the fur seal, previously discussed, we find the beluga or white grampus, which attains a size of from 16 to 20 feet and yields from 75 to 100 gallons of oil. These mammals frequent the waters of Cook inlet, Bristol bay, and the estuaries of the Kuskokwim and Yukon rivers, ascending these streams to a distance far beyond tidewater and sometimes from 300 to 400 miles from the seacoast. The oil and blubber of the beluga are in great demand among the natives inhabiting the coast adjoining, and the oil has to a certain extent become an article of intertribal commerce. The skin of this mammal is also utilized by natives for making straps and lines, boot soles, etc. No attempt, however, has yet been made to place any of the products obtained from the beluga on the general market.

The sea lions and 5 or 6 species of hair seals which are found in nearly all parts of Alaska are hunted almost exclusively by the natives and consumed by them in the shape of oil and blubber, while their skins furnish material for canoes. The demand for the latter article is so great that the firms engaged in the fur trade in Alaska find it necessary to import quantities of sea-lion skins from the Californian and Mexican coasts to make up the deficiency in the home supply.

The walrus formerly furnished the chief food supply for the inhabitants of the coasts and islands of Bering sea as well as the Arctic, but at the present day this huge mammal is rapidly approaching extermination, a result brought about entirely by the almost incessant pursuit instigated by whalers in search of ivory. By far the greater number of walrus killed for their tusks are not even utilized for their meat or blubber, but thrown away and wasted. In Bering sea the animal still frequents a few outlying sand dunes and bars along the north shore of the Alaska peninsula and on the shoals in the vicinity of Hagemeister island and Cape Newenham, but they can no longer be looked upon as being of any commercial importance. The ivory secured by the whaling fleets is derived almost altogether from the Arctic and from traffic with natives inhabiting the northern coast of Siberia.

THE WHALING INDUSTRY.

The Pacific whaling catch, though the result of an industry not strictly confined to Alaskan waters, and which would probably have been developed without our purchase of Alaska, has generally been counted among the benefits resulting from our latest territorial acquisition.

A statement of this catch for a period of 17 years is here inserted, together with its estimated value. The prices of both oil and bone (or baleen) have undergone considerable fluctuations, the market value of the bone reaching the high figure of \$4 and even \$4.50 per pound within the last few years, but our valuation is based upon a conservative estimate of average prices.

With the employment of steam in pursuing the huge cetaceans to their most remote haunts the output of bone began to increase, apparently reaching the high-water mark in the year 1887, when 526,200 pounds of whalebone were landed in San Francisco and placed on the market.

The high price of bone and low price of oil have had the deplorable effect of directing the whaler's attention to the former article exclusively, and hundreds of carcasses of whales, representing a great many thousand barrels of oil, are cast adrift every season after the baleen has been secured by severing the head of the animal. In this manner vast quantities of valuable substance are wasted, which, even though the price of oil may not warrant the expense of trying and barreling, would furnish an abundance of food for the natives of the Arctic shores, who are subject to periodical seasons of a distressing scarcity of food.

The number of barrels of whale oil secured annually by the Pacific fleet has been declining constantly and steadily since the year 1887.

CATCH OF PACIFIC WHALING FLEET FROM 1874 TO 1890.

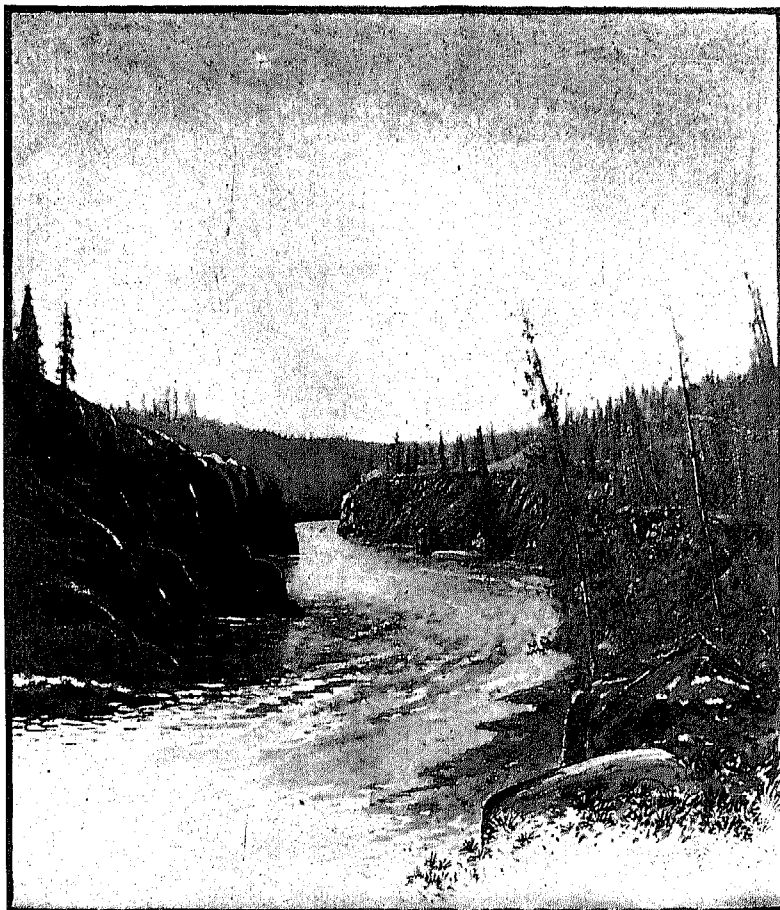
YEARS.	Oil. (Barrels.)	Bone. (Pounds.)	Ivory. (Pounds.)	YEARS.	Oil. (Barrels.)	Bone. (Pounds.)	Ivory. (Pounds.)
Total	306,039	4,202,043	284,395	1882.....	21,100	310,600	17,800
1874.....	10,000	86,000	7,000	1883.....	12,300	160,200	23,100
1875.....	16,300	157,000	25,400	1884.....	20,373	295,700	5,421
1876.....	2,800	8,800	7,000	1885.....	24,844	451,038	6,564
1877.....	13,900	139,600	74,000	1886.....	37,260	304,530	2,850
1878.....	9,000	73,300	30,000	1887.....	33,066	526,200	5,615
1879.....	17,400	127,000	32,000	1888.....	16,066	320,247	4,018
1880.....	23,200	339,000	15,300	1889.....	14,127	310,347	6,128
1881.....	21,800	354,500	15,500	1890.....	12,503	231,081	5,790

VALUE (ESTIMATED).

Oil, 306,039 barrels.....	\$2,853,351
Bone, 4,202,043 pounds.....	8,204,087
Ivory, 284,395 pounds.....	147,047
Total.....	11,204,465

Eleventh Census of the United States.
Robert P. Porter, Superintendent.

Alaska.



SCENERY IN THE YUKON MINING REGION.

CHAPTER XV.

THE MINES OF ALASKA.

The mining industry of Alaska has been so rapidly developed during the last decade and it has assumed so prominent a place among the resources of the territory that it seemed best to intrust this subject to one of the assistants for special investigation and a full report based upon the results obtained. Mr. Henry Boursin, who enumerated the northern part of the first district, devoted himself to this undertaking and brought it to a highly satisfactory conclusion. In addition to the mineral resources within his district he investigated other industries carried on in the mining towns and camps, or in their immediate vicinity. His report is here inserted in full.

MINING AND OTHER INDUSTRIES OF ALASKA.

BY HENRY BOURSIN.

Gold was first discovered in the vicinity of Sitka at Silver bay, 10 miles northeast of the town, by Frank Mahoney, prospector; Edward Doyle, a discharged soldier, and William Dunlayo. While prospecting for placers these men found (in June, 1873) a gold-bearing quartz vein on Slate creek, about 2 miles from the mouth, and took samples of the ore to Sitka. One of the men to whom they showed the samples was Nicholas Haley, at that time a private in the United States service. Haley, who had mined in California and Nevada, thought the rock good, and being informed as to the location of the vein, went to Silver bay, and after prospecting a few days discovered and located the Stewart claim. Some years after, through Haley's untiring efforts, a company was formed at Portland, Oregon, for the purpose of developing the vein, and in 1879 a 10-stamp steam and water power mill was built. The mine and mill were worked a few months, but failing to make expenses the company suspended operations in the spring of 1880, since which time no serious effort has been made to put the property on a paying basis. The claim was relocated as the Cash mine in 1883. The workings consist of 1 tunnel 150 feet in length, from which a 40-foot shaft is sunk on the vein; 1 tunnel 75 feet long and another 40 feet long. The vein is 7 feet wide, lies in slate, and is well defined. The ore is free milling white quartz, with which slate is more or less associated, bearing gold and containing a small percentage of sulphurets. About \$100,000 has been expended on the property. In 1886 the Lake Mountain Mining Company was organized at Madison, Wisconsin, to develop the Lucky Chance mine in the same district, and the following year a 5-stamp water-power mill was built about a mile from the mine, with which it was connected by wagon road. 60 tons of ore were crushed in the mill, when work was stopped; it has not been resumed except in a desultory way.

The property is distant 3.5 miles by trail and 7 miles by wagon road from Silver bay, at about 1,500 feet elevation. The vein is 6 feet wide and lies in slate. It is opened by a 250-foot tunnel, 90 feet of which is in ore, and a 90-foot upraise on ore from the tunnel to the surface. The ore is white quartz, similar to the Stewart ore. The Silver bay vein is 6 feet wide and lies in slate. It is opened by a tunnel about 300 feet from the beach of Silver bay at an elevation of about 60 feet. The tunnel is 96 feet long, from which a shaft has been sunk 26 feet. Several other veins have received more or less attention in the Silver bay district, and give very fair prospects. The characteristic occurrence of gold is in spots or pockets through well-defined veins of low-grade white quartz.

Rich silver-copper ore has been found near Sitka, particularly on the west coast of Chichagof island. In spite of the failure of the two attempts to open mines at Silver bay, and the consequent depression of the industry at Sitka, I have no doubt of the existence of good veins in that district and that the town of Sitka will some day be the supply center of a good mining region.

The hot springs, 10 miles south of Sitka, will in time be made a popular health resort. The Russians built a hospital and baths here some years before the transfer. It was found that the waters were beneficial in blood, skin, and rheumatic diseases, and in many such cases a positive cure was effected. At present there are a few cottages and a bath house for the accommodation of the few who visit the place. There are 3 springs, 1 sulphur and 2 magnesia. The temperature of the former is about 125°; the others are considerably cooler.

With the establishment of a mail route from Sitka westward to Unalaska has begun the development of a vast region whose growth will contribute materially to the prosperity of Sitka.

YAKUTAT.

The 2 small villages of the Yakutats are at Yakutat bay, 240 miles northwest of Sitka. One village is on Khantaak island and the other across Port Mulgrave on the mainland. The natives support themselves by hunting sea otter, fur seal, bear, fox, and hair seal, and subsist almost entirely on fish, game, and wild berries. The women sell a large number of baskets, at making which they are more expert than the women of any other tribe.

A Sitka firm has established a trading station at Yakutat and is doing a light business in furs.

In 1887 the auriferous black sand deposits on the western beach of Khantaak island were discovered, and the following spring 40 or 50 prospectors went to Yakutat and after considerable prospecting and some actual work during the summers of 1888 and 1889 the ground was abandoned. In July, 1891, 3 miners located 40 acres of land along the beach and sluiced out about \$3,000 during that summer, realizing as high as \$90 in 10 hours' work.

The ground is a ruby-tinted black sand containing scale gold. It lies on the beach between high-tide mark and the sea, and is evidently deposited by the waves.

Near the shore of Disenchantment bay at the head of Yakutat bay are a number of seams of black lignite, on which several shallow shafts have been sunk. The discoverers were compelled to abandon work through lack of means. The coal is said to be of good quality, and the present exploration shows seams large enough to be profitably worked. Good-sized veins of lignite have also been found at Lituya bay, midway between Yakutat and Sitka. No attempt has been made to work them. The croppings reveal a light weight, glossy black lignite, which breaks with a conchoidal fracture and burns quickly, leaving a small percentage of white ashes.

The natives report the existence of petroleum in the country between Lituya and Yakutat bays, and I am reliably informed of one white man who proved the truth of the report by accompanying a party of natives to the locality. Nothing is known concerning the extent of the field.

In 1890 a few men from Juneau began to work the black sand beach a few miles east of Lituya bay. The result was satisfactory, and the work was continued in 1891 on a larger scale, 12 men being employed. The method of working is by sluices, the water being brought by ditch and flume a distance of 2 miles. The yield in 1891 is said to have been \$15,000. The auriferous black sand is found scattered along the beach from Glacier bay westward, and deposits have been prospected at Dundas, Taylor, and Dry bays. 3 men were engaged on the black sand at Taylor bay during the summer and autumn of 1891; their success was sufficient to warrant a continuance of the work next season.

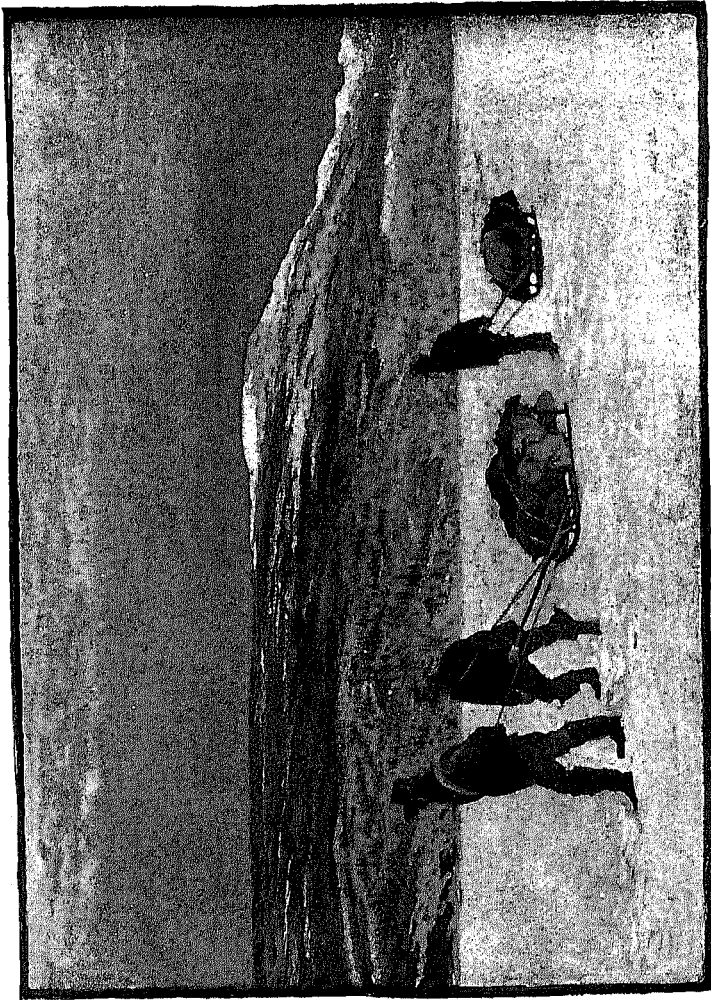
JUNEAU AND VICINITY.

The honor of the first discovery of gold in that extensive and important mining region of which the town of Juneau is the center is shared by 2 pioneer prospectors, Richard Harris and Joseph Juneau. In the summer of 1880 these men started in a canoe from the quaint old town of Sitka to prospect the mainland coast, and about August 15 discovered gold in a stream which they aptly named Gold creek. Their stock of provisions being nearly exhausted, they did not ascend the stream to its source and soon returned to Sitka, taking with them 150 pounds of valuable gold quartz and 13 grains of "dust". Having secured another outfit, they hurried back to Gold creek, and soon found its source in a little round valley inclosed by steep, glacier-capped mountains. This spot they named Silver Bow basin, after a place of that name in Montana. On the mountain slopes encircling the basin gravel was found worth from 15 to 30 cents to the pan, and quartz that seemed to have been splashed with gold. October 4 Juneau and Harris, with the aid of 3 natives, located their choice of the placer ground, and within a month located 18 quartz claims, organized Harris' mining district, adopted local rules for the new district, and staked off a town site near the mouth of Gold creek, which they named Harrisburg. They then returned to Sitka with 960 pounds of gold ore, worth \$14,000.

This golden cargo crazed the quiet town, and a number of adventurous fellows, procuring boats, canoes, or steam launches, rushed off to the new diggings with Juneau and Harris. The season was too far advanced for prospecting in the basin, so log cabins were built on the site staked off by the founders of the camp. During the winter of 1880-1881 the town of Harrisburg flourished; 5 general merchandise stores were established and saloons appeared so quickly as to seem spontaneous; miners and frontiersmen generally flocked in from Wrangell and British Columbia, and all waited impatiently for spring. At a miners' meeting in February, 1881, the town name was changed to Rockwell, in honor of Lieutenant Rockwell, United States navy, and the following November, at another meeting, the place was rechristened Juneau, in honor of Joseph Juneau. On the 27th of January John

Eleventh Census of the United States.
Robert F. Porter, Superintendent.

Alaska.



MINERS EN ROUTE TO YUKON RIVER.

Pryor, Antone Marx, Frank Berry, James Rosewald, and William Mehan discovered placer and quartz on the beach of Douglas island, 4 miles from the town. They began working the placers early in March, washing out 27 ounces of gold in the first 3 days' work.

The first shipment of gold from the new camp was taken from this claim and amounted to 84 ounces. The claim, still known as Ready Bullion, yielded about \$12,000 in 1881, \$3,000 in 1882, and in 1884 was sold to John Treadwell.

The Webster 5-stamp water-power mill was built in Gold creek canyon, about 2 miles from Juneau, in the summer of 1881. The mill has worked small lots of Silver Bow basin ores every summer since Pierre Joseph Erussard and Henry Borien were partners in the first store in the town. Erussard, commonly known as French Pete, was living with a native woman, and learning from the brother of his mistress of a large quartz ledge on Douglas island he located the Paris claim on the 1st day of May, 1881. Soon afterward John Treadwell examined the claim, and having a favorable opinion of the prospect, had a ton of the ore sampled in San Francisco. The test was satisfactory, for Treadwell purchased the claim in September for \$400. Mr. Treadwell thoroughly prospected the claim by tunnels and shaft; built a 5-stamp mill in 1882, and organized the Alaska Mill and Mining Company in San Francisco. The company erected a 120-stamp mill, and the next year added chlorination works and built a wharf. In 1887 the present chlorination plant was built and the Brush electric light introduced. In 1888 the company doubled the equipment of the mill, making it 240 stamps. The property was acquired by the Alaska-Treadwell Gold Mining Company in 1889.

From 1882 to 1884 placer miners held the surface ground of the Paris claim, and by right of might sluiced out an amount variously estimated from \$40,000 to \$120,000. While developing the Paris Mr. Treadwell acquired other valuable ground adjoining, so that the present management owns 2,050 feet on the ledge. The mine is opened by a crosscut tunnel 540 feet long, from which drifts are run on the vein. The southeast drift is 860 feet in length, the last 60 feet being in the ore of the Mexican property, the southeast extension of the Alaska-Treadwell. The northwest drift is 500 feet long. Various other drifts and crosscuts on the same level make the entire length of the workings about 3,000 feet. Three large quarries are connected with the drifts by a number of chutes emptying into a train of 12 cars, transported by locomotive down a slight grade, and dumped into bins at the top of the mill.

The present dimensions of the pits are as follows:

PITS.	Length at top.	Length at bottom.	Width.
	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>
No. 1.....	500	340	300
No. 2.....	360	240	180
No. 3.....	180	140	100

Snow falls in the pits in winter, causing the ore to clog the chutes, with the result that the mill is often prevented from working to its full capacity. To avoid this, and to open the mine at a greater depth, another level was run in 1891 by sinking a shaft 120 feet deep, near the mouth of the working tunnel and connecting it by a crosscut tunnel with another shaft on the ore. From this tunnel drifts will be run, from which in future winters an uninterrupted supply of ore may be obtained. Although the 120-foot level is 36 feet below high tide, the mine makes little water. The ore and water from the 120-foot level are hoisted by water power. The ledge is 460 feet wide where crosscut by the working tunnel, 250 feet below the surface. It lies between diorite hanging wall and slate foot wall and runs 15 degrees south of east. The dip is about 75 degrees to the north. The ore varies from a pure white quartz to gray quartzite. It carries about \$3.60 per ton in gold, 2 per cent of iron sulphurets (carrying gold), and traces of copper, silver, and zinc. The ore in the 120-foot level is a little poorer, and the ledge is not as wide as it is on the surface. The mill is run by 500 inches of water applied to a 7-foot Pelton wheel under 520 feet pressure. When the water supply is short, either from drought in summer or cold in winter, the power is supplied by a pair of 600-horse power Corliss engines, supplied with steam by the Heine safety boilers. 25 tons of Wellington coal are consumed daily when the mill is run entirely by steam. The building containing the air compressor and dynamos is situated a few feet above the batteries of the mill, so that when the supply of water is short the water used in running the air compressor, and dynamos is also used in the mill batteries. An 8-foot Pelton wheel furnishes power for the air compressor, running 5 Ingersoll-Seargent drills, and the same wheel also runs the 2 dynamos for the electric lights. 4 tons of Judson Powder, Nos. 1 and 2, are consumed monthly.

The mill is situated about 150 feet from the mouth of the working tunnel and 600 feet from the beach of Gastineaux channel. It is equipped with 240 stamps, each weighing 900 pounds. The drop is 7 inches; the speed 96 times per minute. 6 Blake rock crushers, 48 Challenge feeders, and 96 plain belt True concentrators are used.

The concentrates are transported by tram car down an easy grade and dumped on the top of the roasting furnaces in the chlorination works. The sulphurets contain nearly \$49 per ton in gold, mechanically associated

with the sulphur and iron. 4 3-hearth reverberatory furnaces, each 60 feet in length, are in use; their capacity is 18 tons per day. The consumption of fuel is one-fourth cord per ton of ore. 1.25 per cent of salt is used in roasting. 16 gassing tubes, each with a capacity of 5 tons, and a proportionate number of precipitating vats are in use. The entire cost of the roasting and chlorinating is about \$9 per ton of concentrates. 22 arc lights of 1,000-candle power each and 160 incandescent lights of 16-candle power each are used in lighting the works. Residences for the superintendent and other officers of the company, a large boarding and lodging house for the employes, a completely stocked general store, a machine and repair shop, a number of warehouses, woodsheds, etc., are also a part of this great property. About \$1,000,000 has been expended in developing the mine, of which amount \$225,000 was expended in the construction of 18 miles of ditch.

Following is a statement of the production of the mine since it was first opened in May, 1882, as taken from the report of the directors for the year ending May 31, 1891, as published in the Engineering and Mining Journal. The total receipts were \$790,001.71, of which \$754,795.81 was from bullion, \$14,969.99 from concentrates (501 tons) and tailings, \$1,258.75 from interest, and \$18,977.16 from the company store. The expenses were as follows: mining 220,686 tons of ore, \$155,572.19; milling 220,686 tons of ore, \$92,838.41; chlorinating 5,368 tons of concentrates (5,777 tons were saved), \$48,400.13; general expenses, \$23,020.59 (Douglas island, \$17,752.07; San Francisco, \$5,268.52); bullion charges (freight, insurance, and refining), \$11,652.59; construction account (new machinery), \$33,987.57; total mining expenses, \$365,471.48; expense of organization of new company, \$6,321.33; profits for the year, \$418,208.90. The dividends declared during the year amounted to \$200,000. The expenses per ton of ore were divided as follows: mining 220,686 tons—labor, \$0.4555; supplies, \$0.2495; total, \$0.7050. Milling 220,686 tons of ore, 5,777 being saved—labor, \$0.1940; supplies, \$0.2266; total, \$0.4206. Chlorination of concentrates: labor, \$5.0312; supplies, \$3.9852; total, \$9.0164, or \$0.2193 per ton of ore. General expense, including salaries, interest, exchange, insurance, hospital account, etc., \$0.0804. San Francisco office expense, \$0.0239. Bullion charges, \$0.0528. Total operating cost, \$1.5020. Legal and other expenses of incorporation of company, \$0.0286 per ton of ore. Construction account, \$0.1540 per ton of ore. Total cost of operating and construction, \$1.6846. The yield per ton of ore was \$3.58, the net profit being \$1.90.

The Alaska-Treadwell Gold Mining Company was organized in 1890, with a capital of \$5,000,000, divided into 200,000 shares of \$5 each, fully paid. The company took over the Paris mine on Douglas island on June 1, 1890. The production of this mine from the time when first opened in 1882 to May 15, 1891, has been as follows:

DATES.	Tons crushed.	Yield free gold.	CONCENTRATES (SULPHURETS).		Total yield.	Total yield per ton after 1884.	Operating profits.
			Tons chlorinated.	Yield.			
Total	837, 798	\$2, 391, 045. 93	14, 784	\$717, 518. 84	\$3, 109, 164. 77	\$3. 70	\$1, 497, 208. 90
1882 to 1884		10, 902. 80			10, 902. 80		
August to December, 1885	34, 495	232, 176. 33	205	10, 143. 00	242, 319. 33	7. 02	729, 000. 00
January to December, 1886	90, 826	283, 750. 24	1, 560	82, 429. 97	366, 180. 21	4. 03	
January to December, 1887	108, 306	343, 421. 80	1, 097	133, 512. 72	476, 934. 52	4. 40	
January to December, 1888	121, 173	348, 264. 20	1, 354	81, 025. 21	429, 889. 41	3. 55	
January to December, 1889	214, 544	540, 665. 03	2, 527	111, 825. 75	652, 490. 78	3. 04	308, 000. 00
January to May, 1890	47, 768	101, 279. 70	1, 516	59, 402. 16	160, 681. 86	3. 36	38, 000. 00
June, 1890, to May, 1891	220, 086	531, 185. 77	45, 869	238, 580. 03	769, 765. 80	3. 49	418, 208. 90

a Including 501 tons sold. On May 15, 1891, there were about 1,200 tons concentrates on hand, worth (net) over \$30 per ton; the total profits have hence been \$1,530,000, or nearly one-half of the gross product.

The Bear's Nest group, the northwest extension of the Treadwell or Paris property, was sold in 1889 by M. W. Murray and others to the Alaska Gold Company.

The company erected an 80-stamp mill and ran a 1,200-foot tunnel from a point near the beach of Gastineaux channel to crosscut the ledge. An ore body about 50 feet in width was struck, but the rock was too low grade to be profitably worked, and after considerable prospecting operations were suspended. During the latter part of 1889 and the spring of 1890 some of the stockholders, not being satisfied as to the worthlessness of the property, expended about \$25,000 in further prospecting, when they, too, quit work, since which time nothing but the necessary annual labor has been done.

The Mexican group is the southeast extension of the Paris. The property is 3,700 feet in length. The vein has an average width of 45 feet, the greatest width being on the northwest end. The vein is opened by an 800-foot crosscut tunnel, beginning just above high-tide mark, from which a 900-foot drift is run northwest in the vein. The southeast drift is 500 feet long. In this drift the ore pinches out 300 feet from the intersection of the crosscut. The tunnel is connected with the surface by a shaft 140 feet deep. The average elevation of the ledge is about 190 feet. A 500-ton mill test of the ore was made in the Alaska-Treadwell mill in 1891, and was found to contain \$7 per ton in gold. The ore is similar to the Paris, a part of the gold being free and the rest mechanically associated with sulphur and iron. The tunnel and shafts were run at a cost of \$16 per foot.

The Ready Bullion group is the southeast extension of the Mexican; but little development has been done, however. The ledge is known to have an average width of 40 feet along the 500 feet of croppings. On the beach of Gastineaux channel, where the vein outcrops, about \$15,000 was washed out by sluicing in 1881 and 1882, which is certainly a good indication of the value of the vein.

The Mexican group lies south of and adjoins the Mexican property. The developments consist of a crosscut tunnel 365 feet in length, and a 75-foot shaft connecting the tunnel with the surface. The vein is about 250 feet wide where crosscut by the tunnel. The ore is a quartzite carrying free gold and sulphurets.

The Monarch and King property, 1,500 by 1,200 feet, lies south of and adjoining the Mexican group. About \$5,000 has been expended in running a dozen short tunnels and sinking a 40-foot shaft. The work exposes a low-grade ledge or deposit of sulphuret ore 700 feet in width.

The Douglas island group adjoins the Bear's Nest property on the northwest. A tunnel 700 feet long has been run from the beach to crosscut the vein at a distance of 1,200 feet (estimated).

The Great Eastern group of 7 claims, 4,000 feet in length, lies northwest of and adjoining the Douglas island. A crosscut tunnel started on the beach just above high tide is now in 400 feet. The ledge is 50 feet wide between diorite (hanging wall and slate foot wall), and has an average elevation of 450 feet.

The ore is low-grade gold, with small percentage of sulphurets. \$5,000 has been expended on the property.

About 3 miles northwest of the Treadwell mine on Douglas island is the ground of the Alaska Union Mining Company. In 1887, after an 80-stamp mill, tramway, wharf, boarding houses, etc., were built, a mill test of 500 tons of rock disclosed the fact that the rock carried but a few cents per ton gold. About \$300,000 was expended, 5 per cent of which amount, if devoted to tunnels and shafts, would have amply demonstrated the worthlessness of the property.

At the edge of the town of Douglas, on the beach of Gastineaux channel, is the sawmill of the Alaska-Treadwell Gold Mining Company, built in 1884 by the Alaska Mill and Mining Company. Power is furnished by 1 80-horse power engine supplied with steam by 2 safety boilers. The output (consisting of rough and dressed spruce lumber and squared timbers) is entirely consumed in the local market, and chiefly in the construction of quartz mills and other mine buildings. Logs are purchased from the loggers at \$6 per thousand feet and towed in booms to the mill by a steam tug. Rough lumber sells for \$16 per thousand feet; dressed lumber sells for \$22. A locomotive tramway connects the sawmill with the plant of the Treadwell company.

JUNEAU.

2 miles from Juneau, in Gold creek canyon, is the 10-stamp water-power mill of the Taku Consolidated Mining Company. The ground owned by the company extends from Gold creek easterly over the mountains and is several thousand feet in length. No veins have yet been discovered, though nearly all the ground is ribbed with stringers of white quartz carrying free gold. These stringers lie in slate, run with the formation, and vary from a few inches to 6 feet in width. The workings consist of open cuts, from which the ore is blasted, shoveled into cars, and trammed down a gentle grade to the ore bin, from which it is taken by a short wire-rope gravity tramway to the mill. 20 tons of ore are worked daily during the season, May to November, inclusive. No record of the output can be obtained. The management claim that the property netted enough to pay for all improvements in the first season's run of about \$50,000.

The Dora group is the northwest extension of the Taku Consolidated. The property is 4,500 feet in length and 1,200 feet wide. About 30 stringers of white quartz carrying free gold are on the ground. The workings consist of a few short tunnels and a number of cuts, from which ore was taken and worked in an arrastre with gratifying results. Development has been retarded by litigation with the Humboldt owners.

The Webster 5-stamp water-power mill is situated in Gold creek canyon a few hundred feet from the Taku Consolidated mill. The mill crushes small lots of ore from the Humboldt claim. The placer mine of the Silver Bow Basin Mining Company is in Silver Bow basin, at the head of Gold creek, 4 miles from Juneau. The altitude is 1,250 feet. The mine is opened by a tunnel 3,000 feet in length, run through slate and requiring no timbers. The property is 110 acres in area. The ground is a loose and easily worked alluvial wash, about 70 feet average depth, lying on slate bedrock, and containing a large number of quartz boulders and a considerable quantity of black sand (iron and galena). A number of granite and slate boulders are blasted and handled by derrick. An abundance of water is brought by ditch 1,600 feet and flume 1,400 feet, and applied to 2 monitors (4 and 5 inch nozzle) under a pressure of 240 feet. The tunnel is laid with a double 4 by 4 foot sluice, with a grade of 4 inches to 12 feet. Spruce and granite riffle blocks are used. The entire cost of opening the property, which was completed May 25, 1891, was \$325,000. It is said that the yield for the remainder of the season was \$100,000. 12 white men at \$2.50 per day and board and 20 natives at \$2.50 per day are employed during the working season, April 1 to November 20.

The mountain sides south and east of the basin and the gulches leading into it from those directions have yielded most of the placer gold washed out in southeast Alaska. About one-half of the placer ground has been worked off, exposing an astonishing number of quartz stringers rich in free gold and gold-bearing sulphurets. Small areas of placer ground are being sluiced each season by about a score of white men and a somewhat greater number of natives in their employ. The annual yield of these small mines is about \$25,000.

The origin of the placer gold in the basin is found in the rich stringers previously mentioned; a small part of the gold contained in these quartz seams having been freed by the resistless action of water and ice. The entire yield of the Silver Bow basin placer mines is estimated at \$600,000.

The Fuller First Mine, the first quartz location in Silver Bow basin, has an altitude of 1,650 feet above the sea and 400 feet above the basin proper. The claim is 1,000 feet long and 398 feet wide. The whole claim is ribbed with stringers of white quartz lying in and running with a slate formation.

The ore is free milling, carrying \$10 per ton in free gold and 6 per cent of concentrates. The concentrates are iron sulphurets, galena, and blackjack, worth \$200 per ton. The mine is worked by open cuts (chiefly) and 2 tunnels. Tunnel No. 1 is a crosscut tunnel 140 feet in length, in which distance 6 rich stringers were found. Tunnel No. 2 is 60 feet long, and is now in 12 feet of ore. A water-power Dodge mill, with a capacity of 10 tons per day, was built on the claim in the summer of 1890 and has run steadily during the working season since. 4 white men are employed in the mill at \$3.85 per day average, and 5 white men at \$3.50 per day and 3 natives at \$2 per day are employed in the mine.

The quartz mine of the Eastern Alaska Mining and Milling Company is on a mountain above the basin at an altitude of 3,000 feet. The property is 4,780 feet long and 600 feet wide. The entire ground is ribbed with stringers of white quartz, carrying free gold, iron pyrites, galena, and zinc blende. The formation is slate. The mine is opened by 3 tunnels, the lowest of which is 170 feet long, all in ore. No. 2 is a crosscut 130 feet long. No. 3 is 110 feet in length, all in ore. Ore is also taken from a number of shorter tunnels and open cuts. The ore body which has been most explored is found to be more than 320 feet long and from 2 to 16 feet wide. 800 pounds of Judson powder are consumed per month. Mining is by hand drilling and costs \$4.60 per ton of ore. The ore is transported to the mill by a Huson wire-rope tramway 4,400 feet long. The mill contains 10 stamps, weighing 1,000 pounds each, dropping 106 times per minute, and crushing 28 tons per day. 1 Blake rock crusher, 2 challenge feeders, and 4 True concentrators are in use. The concentrates amount to 2 per cent, and are worth \$40 per ton. Power is supplied by 110 inches of water applied to a Pelton wheel under 236 feet pressure. The cost of milling is \$2.35 per ton. 28 men are employed in the mine at \$3.50 per day, 6 men in the mill at \$3.50 per day, and 2 men outside at \$2, all whites. The company has expended \$108,000 in improvements, \$14,700 of which was in making 5 miles of road connecting the mine and mill with Juneau. The mine has yielded to date \$33,000, notwithstanding some very bad management. The company propose adding 10 stamps to the mill and introducing electric drills in the mine. The working season is from May to November, inclusive. The company also owns a small water-power sawmill at the mouth of Sheep creek. The output is insignificant.

The Silver Queen mine is 5.5 miles northeast from Juneau, on the mainland. It is distant about 2 miles from navigable salt water, Gastineaux channel, at an elevation of 1,200 feet. The vein lies between slate foot wall and syenite hanging wall, and has an average width of 2 feet, although in the lower workings the width averages 3.5 feet. The property is 2,600 feet long and 1,200 feet wide. The vein outcrops through the entire length of the property. Its course is northeast and southwest, dip northwest at an angle of 80°. The mine is opened by 6 short tunnels, the lowest and longest of which is 270 feet in length. The greatest depth attained is 180 feet. The ore is a white "sugar-grained" quartz, carrying brittle silver (chiefly), zinc, and iron sulphurets. The claim was located in 1887, and during the 3 years following that date several hundred tons of ore were mined and shipped to San Francisco for treatment, netting a small profit over expense of development. In 1891 a 10-stamp water-power mill was built at a cost of \$14,000. 800 tons of ore were worked in the mill when operations were suspended, as the machinery was found incapable of recovering the silver. The ore averages \$60 per ton, and the mill recovered but \$12 per ton. The company proposes introducing the Russell process in 1892. The company has made 1,400 feet of ditch, 2 miles of road, and half a mile of tramway.

The Glacier property is the southwest extension of the Silver Queen. About 120 feet of tunnel has been run, disclosing a greater width of the vein than on the Silver Queen. Ore has been shipped to a San Francisco smelter with satisfactory results.

There are a number of other promising silver properties in the Sheep Creek district, which have received less attention than the Queen.

Very promising quartz veins have been found on Grindstone creek, at Taku inlet, Taku harbor, Limestone harbor, Port Snettisham, Holkham bay, and Windham bay. At the latter place a hydraulic placer mine is being opened by a tunnel 700 feet in length, but as washing has not yet begun, the success of the enterprise is not assured. At Holkham bay is the Bald Eagle group, a very promising gold property, on which the owner will probably build a mill during the summer of 1892.

Gold ledges have been found on Salmon, Leman, Glacier, and Montana creeks, on the mainland north of Juneau, and although some appear to be valuable none have been developed beyond the prospect stage. The gold quartz veins in the vicinity of Berners bay have been worked somewhat in the last 2 or 3 years, and some rich ore has been found on a number of claims. A village with the high sounding title "Seward city" was started in 1890 near Point Sherman, and a 20-stamp mill is to be built on the Comet property in 1892. A number of small mills could be profitably worked in that vicinity.

The Willoughby group is at Funter bay, Admiralty island, 23 miles west of Juneau. The property is 4,500 feet long and 1,600 feet wide. It lies at the edge of salt water, and has an average elevation of 100 feet. There are 4 veins from 2 to 6 feet in width and lying in slate. Their course is northeast and dip about 80° to the northwest. The veins are opened by 2 short tunnels, 40 and 20 feet, and 3 shafts. Shaft No. 1 is now down 15 feet in the 40-foot tunnel; No. 2 is 38 feet deep, and No. 3 is 57 feet. The ore is a hard white quartz, said to contain \$20 per ton free gold and 5 per cent of iron sulphurets, worth \$50 per ton in gold. Ore is worked in a Huntington mill of 5 tons daily capacity and run by a 3.5-foot Pelton wheel under 65 feet pressure. The sulphurets are recovered by 1 True concentrator. Water is furnished by 1 mile of ditch. The mill was finished in July, 1890, and has been operated about one-half the time since. The 2 owners and about 5 other men are engaged in getting out ore and running the mill. A large number of gold and silver veins have been located on Admiralty island, some of which are valuable prospects. The island is particularly remarkable for the number of very large low-grade gold ledges.

APPROXIMATE DISTRIBUTION OF ALASKAN GOLD AND SILVER PRODUCT FROM 1880 TO 1890, AS ESTIMATED BY THE DIRECTOR OF THE MINT.

YEARS.	Total value.	Gold.	Silver.
Total	\$4,631,840	\$4,604,500	\$27,340
1880.....	0,000	0,000	.....
1881.....	15,000	15,000	.....
1882.....	150,000	150,000	.....
1883.....	300,000	300,000	.....
1884.....	200,000	200,000	.....
1885.....	302,000	300,000	2,000
1886.....	448,000	440,000	2,000
1887.....	675,300	675,000	300
1888.....	853,000	850,000	3,000
1889.....	910,343	900,000	10,343
1890.....	772,197	762,500	9,697

LIST OF MINES OPERATED IN THE SOUTHEASTERN DISTRICT OF ALASKA IN 1890.

No.	NAMES.	Number of stamps.	Remarks.
	Total	285	
1	Alaska-Treadwell Gold Mining Company.....	240	Douglas island; Thomas Mien, superintendent.
2	Eastern Alaska Mill and Mining Company.....	10	Silver Bow basin; W. A. Sanders, superintendent; Elmer, manager, office.
3	Fuller First mine	5	Silver Bow basin; Archibald Campbell, owner. Dodge mill.
4	Humboldt mine	5	Near Juneau; W. I. Webster, owner.
5	.....	.....	Carroll, Murrey, Fuller & Webster own property in Silver Bow basin from which ore was shipped in 1890.
6	Taku Consolidated Mining Company.....	10	Near Juneau; mill and mine idle part of 1890. Clarence Coulter, superintendent.
7	Willoughby mine	5	Funter bay, Admiralty island; R. Willoughby and Aaron Ware, owners, Huntington mill.
8	Silver Queen Mining Company	10	Sheep creek, Juneau; F. S. Reynolds, superintendent.
9	Dora mine.....	arrastre	Near Juneau, H. S. Wyman, owner.
10	Bald Eagle mine.....	.....	Holkham bay (Samdum); W. F. Reed et al., owners; shipped ore.

COAL AND OTHER MINERALS.

A number of coal seams have been prospected on Admiralty island near Killisnoo, but none are being regularly worked. The coal is a glossy semibituminous and is said to steam well. It occurs in seams from a few inches to 3 feet in thickness between sandstone (top) and shale or conglomerate. About 2 miles from the beach of Murder cove, near the southwestern extremity of Admiralty island, is a fairly well developed coal property. The workings are at an elevation of 800 feet above the sea and are distant 7 miles from a good harbor. They consist of a 210-foot tunnel, which taps a 7-foot vein at a depth of 40 feet, and a tunnel 150 feet long which had been started with the intention of opening the vein 25 feet lower than the other. The coal occurs between sandstone (top) and soapstone, and appears to be on the same coal field as that discovered near Killisnoo. Sandstone, limestone, and conglomerate are the predominant rocks along the southern half of the western shore of Admiralty island and from Point Gardner northeast a distance of 12 or 15 miles, and it is probable that coal will be found throughout the greater portion of that district.

Several belts of pure white marble have been found in the southwestern part of Admiralty island, and particularly at Hoods bay, where some prospect work was done, and the quality found to be excellent. The croppings are badly shattered, and no attempt was made to ascertain if the stone existed in a solid body at a greater depth. Marble has also been found on the west shore of Baranof island near Atka, on the shore of Lynn canal, on Siwash canal, and on the east shore of Baranof island, but wherever found the outcrop is badly broken. Some of the sandstone on Admiralty island is an excellent building material, and some of the limestone on Admiralty, Baranof, and Chichagof islands is a fine crystalline variety, free from silica and suitable for the manufacture of lime.

WESTERN MINES.

The Apollo Gold and Silver Mining Company of Unga, situated upon one of the Shumagin islands, has been in operation for some 3 or 4 years, and considerable money has been invested in machinery and prospecting, but no bullion shipments have yet been reported. Some prospecting is being done on quartz ledges at various points among the Aleutian islands and Alaskan peninsula, but none of these claims have reached a stage beyond preliminary exploitation.

On the shores of Cook inlet, where prospectors have delved for many years in search of the precious metal, which shows itself almost in infinitesimal particles in the surface mold of all that vast section, but 2 surface claims are now being worked during a brief portion of the year: 1 at the promontory of Anchor point, on the east coast of the inlet, where 3 men have succeeded in washing a few hundred dollars each from beach gravel as it is cast up by the tides. This insignificant result has only been obtained after running a ditch back into the swamps for a distance of more than 1.5 miles. The other camp, on Cook inlet, is located on the furthestmost branch of the inlet, the Turnagain arm of Captain Cook. The average yield to the men per diem in both of these claims does not exceed \$7, while the time of working the claims is curtailed both by the frosts of winter and the drought of summer.

We know of deposits of silver-bearing galena ore in various sections of Alaska, but the only instance of such a deposit having been thoroughly prospected and worked is that of the Oonilak mine on Golofnin bay, from which a few shipments of ore were made to San Francisco. During 1890 operations at this mine were entirely suspended, chiefly owing to the report of experts that no continuous vein of the ore existed, the same being found only in irregular and disconnected deposits or "pockets". In 1891 operations were resumed with increased capital and new energy.

Of almost pure native copper and copper ore very fine specimens have been obtained from the banks of Copper river and its tributaries, as well as from other parts of Alaska, but we have no definite information as to the magnitude of the deposits, while we do know that they are inaccessible and can not be worked until some means of transportation can be devised from the seaboard into the heart of the precipitous mountain regions where the existence of copper ore has been reported.

Coal veins of considerable extent were known to the Russians during the earlier days of their occupation of the territory now called Alaska. In nearly every report rendered to the imperial government by the successive chief managers of the Russian colonies the existence of coal veins is mentioned, but it was not until after the discovery of gold in California that an exploration of these veins was begun in earnest. A combination was formed between San Francisco capitalists and the Russian American Company, experienced miners were imported from Germany and Russia, and Siberian soldiers were obtained from the Russian government to serve as laborers, and extensive works were erected over the coal deposits at Grahams harbor or English bay. A massive stone pier was erected in front of these works, which stands to the present day, a monument of one of the many instances of spasmodic enterprise exhibited by our predecessors on Alaskan soil.

At the beginning of these coal mining operations there was a demand even for an inferior lignite coal, of which those veins are composed, and at the same time the Russian American Company's authorities at home issued orders that no other coal should be burned by steamers of the colonial fleet. It was not long, however, before San Francisco dealers refused to buy this coal, and the engineers of the Russian company's steamers entered a protest against its use, as it was rapidly destroying their furnaces. Operations on the Grahams harbor coal veins were not entirely suspended, however, until within a few years of the transfer of the country.

Since Alaska has been occupied by the United States coal has been found and reported in many localities; in most instances it was tried and found wanting in steam producing qualities. At various locations on Admiralty island, in the Alexander archipelago, the existence of anthracite coal was reported, but in every instance the report turned out to be false, and though at a few points veins of the best quality of lignite have been discovered, the extent of the deposit was not large enough to warrant great expenditure in its development. Within a few miles of the old Russian coal mines on Cook inlet, near the northern point of the Gulf of Kachemak, there exists quite a deposit of lignite coal, which was known to the Russians, but was not prosecuted by them. Here American prospectors have made a number of locations within the last few years, and bonded them all to San Francisco capitalists. One or two small cargoes from these veins were shipped to San Francisco, one of them amounting to several hundred tons, but at present the veins are allowed to remain as they were. A single white man, one of the locators, who has erected a few small buildings, is living there, "holding on", with a coal pile of something less than 100 tons, waiting the advent of purchasers. As this coal deposit was bonded to Mr. John Treadwell, of Douglas island, it can not be lack of capital that is retarding the development of the Kachemak coal mines.

Coal of really good quality, though also lignite, has been discovered and located on the island of Sitkhiak, separated from Kadiak island only by a narrow strait. Great hopes were entertained of this location until it was discovered that on the one hand the deposit was somewhat limited in extent, while on the other, owing to the almost constantly raging surf beating around the shallow coast of Sitkhiak, not a pound of this coal can be shipped without the erection of very costly structures in the way of piers and artificial harbors.

On the island of Unga, on the shores of what is variously called Humboldt bay or Coal harbor, a coal vein was opened within a few years from our acquisition of Alaska; but the first cargo shipped from here to San Francisco, consisting of somewhat over 200 tons, was dumped into the bay on arriving at San Francisco, proving unsalable in that market. This was probably partly decomposed coal from veins that had for ages been exposed to the action of the atmosphere. Not at all daunted by this experience, the owners of the Unga vein continued to expend a certain amount of labor on it from year to year, and a few more small shipments of coal were made, but with little better success. Finally, the property fell into the hands of 2 men, who reside on the claim and eke out a living by combining a little cod fishing and trading with delving in the veins, from which they extract the small quantity required by sea-otter hunters and fishermen living in the immediate vicinity. The pamphlets issued by the first owners of this claim, with the view of selling the stock, are still in existence, having on their covers an enticing picture of locomotives hauling heavily-laden trains from the mines over a magnificent pier, all of which improvements are yet to be made.

Not far from the location just described, on Chignik bay, on the south coast of the Alaska peninsula, a deposit of fine looking coal was discovered 3 years ago by some sea-otter hunters and prospected to a certain extent. Contrary to all experience from coal mining generally, the surface deposit in this instance was of good quality, but was found to be deteriorating as the prospectors' shaft progressed downward. Having no capital and no stock for sale, the hunters dropped the enterprise then and there.

On one of the interior branches of what is known as Moller bay, on the north side of the Alaska peninsula, several of the employes of the Alaska Commercial Company located 2 years ago a coal deposit which promises to be the first of real value. A company was formed to work these veins, and considerable capital has been invested in building tramways, wharves, etc.; a coal yard has been located and fenced in in Unalaska harbor, to supply steam whalers and other shipping in Bering sea with fuel. The first practical use of this coal was made during the summer of 1890, and the reports on its quality vary somewhat. The general drift of opinion, however, seems to be that there is every prospect of these deposits improving in quality as lower depths are attained in working the mine, which is situated upon an isthmus between 2 bays, one opening into Bering sea and the other into the North Pacific, across which a tramway will probably be completed within a year. The number of tons shipped from the Moller bay mine during the present year could not be ascertained at the time the material for this report was secured.

MINING TOWNS AND THEIR TRADE.

With its mountains, sea, and islands, the environment of Sitka is far famed for beauty, while the picturesquely dilapidated old Russian houses give the place a quaint and characteristic appearance.

The capital of Alaska has a population of less than 1,200, of which 280 are white. The white town is supported chiefly by the trade of the Sitka and Yakutat natives, who sell their furs, baskets, carvings, spoons, bracelets, beadwork, etc., and purchase all their clothing and a constantly increasing proportion of food and utensils. The native "curios" are sold to the many tourists who visit southeast Alaska during the summer. The naval vessel and detachment of marines and the chief officers of the district government also add not a little to the life of the place. The business houses are: 4 general merchandise stores, 2 sawmills, 2 drug stores, 2 hotels, 2 restaurants, a weekly newspaper, "The Alaskan", a photograph gallery, a brewery, and 4 saloons. The furs obtained and sold by the natives are: silver gray, cross, and red fox, mink, marten, muskrat, land otter, sea otter, lynx, wolf, wolverine, ermine, black and brown bear, deer, mountain sheep, hair seal, and fur seal. None of these skins are plentiful, and

the entire fur trade of Sitka is small. The old Russian sawmill has been operated but a few days in the last 2 years. The entire machinery is old and out of date and the building almost in ruins. Power is furnished by an overshot wheel. The Sitka Milling Company's sawmill is a small and nearly new steam-power mill. It is run but a few weeks annually, supplying the small amount of lumber used in Sitka and the immediate vicinity. The lumber is spruce; no use has been made of hemlock and yellow cedar except for fuel.

The salmon cannery of the Baranof Packing Company is at the redoubt a few miles south of Sitka. It was established in 1889 at a cost of \$21,000, including a steam tug costing \$6,000. The average annual pack is about 10,000 cases. 10 white men, 29 Chinese, and about 39 Thlingits are employed. The Chinese are employed in the canning; they are paid by contract 52 cents per case and transportation from California to Sitka and return. The natives are paid \$1.50 per day and are employed as laborers and fishermen. The superintendent says that the natives are unsatisfactory employés, and will not be engaged in the future when other labor is obtainable. Drag seines and drag seine boats are used in fishing. A few barrels of salted salmon and a few cases of dried halibut are put up. The season begins about June 28 and ends about October 10. 2 or 3 years ago an attempt was made at Sitka to prepare and ship smoked halibut, but through lack of experience in preparing the article the business proved unprofitable and was abandoned. Halibut are abundant in the waters about Sitka, and there is no reason why the business should be unprofitable if properly carried on. Herring, cod, crabs, salmon trout, and other less valuable food fishes are also abundant.

A salmon cannery was established in 1891 at Red Fish bay, 60 miles southeast of Sitka. The pack was about 8,000 cases.

In April, 1889, Captain W. S. Morrissey established a salmon fishery at Fish bay, Peril strait, about 20 miles northwest of Sitka. The fishing and packing is done by natives under contract. The annual pack is about 800 barrels of salted salmon. A store is run by Mr. Morrissey, as agent of a San Francisco firm, to supply the natives and trade with them for furs.

The steam schooner *Leo*, owned by a Sitka firm, was engaged in sealing during 1891 with indifferent success. 2 small sailing schooners, owned by persons residing at Sitka, were also sealing with moderate success.

The town of Douglas is on Douglas island, one-half mile northwest of the Treadwell mine. With the exception of a few business houses, the 2 school buildings, the mission, and a few neat residence cottages, the houses are mere cabins, which seem to have dropped at random among a wilderness of stumps. Along the water front is a few hundred feet of good street; all the other streets are imaginary lines indicated in places by a single line of sidewalk. The business houses are: 13 saloons, 1 drug store, 4 general merchandise and 2 grocery stores, 2 hotels, and a barber shop. The post office, a shoe shop, and a small stock of stoves and tinware are in the same building and in charge of 1 man.

Between the Treadwell mine and the town of Douglas is a village with a native population of 300, drawn from every tribe in southeast Alaska. These people procure a larger proportion of their food and utensils from the white traders than do the natives of any other village. The Treadwell mine employs about 50 native men as laborers. They are paid \$2 per day, and are satisfactory workmen at that price.

The town of Juneau has a population of 1,253, of which number 671 are whites. It is fairly supplied with sidewalks, the principal streets are graveled, the stores are completely stocked, and there are many neat residences. The business houses are: general merchandise, 9; saloons, 22; hotels, 3; restaurants, 2; lodging house, 1; drug stores, 2; stoves and tinware, 2; jewelry, etc., 2; breweries, 2; furs and curios, 2; cigar factories, 2; slaughterhouse, 1; meat market, 1; lumber, etc., 1; newspaper (weekly), 1; millinery, 1; photographer, 1; confectionery, 1; steam laundry, 1; barber and baths, blacksmith shops, etc. Communication is had with Douglas island by a steam ferryboat. A theater building, with the misfit name "opera house", has a seating capacity of 400, and is used for all entertainments of a public character. The chief support of the town is and will always be the mining industry. The trade with the natives is considerable, however, from whom about \$35,000 worth of furs are annually purchased. The varieties are the same as those procured by the Sitka traders. Sea otter, fur seal, and a large share of the bear are obtained from the Hunas. The larger part of all the other furs is bought of the Chilkats and Takus. Juneau is the outfitting point for the miners who enter the interior of Alaska every spring via Chilkoot pass, and from \$15,000 to \$25,000 is brought to the town in the autumn of each year by these returning miners.

FISHERIES AND OTHER INDUSTRIES.

On a little island barely separated by a narrow channel from the southwest coast of Admiralty island is the plant of the Alaska Oil and Guano Company and the little village of Killisnoo. The principal business of the company is the extraction of herring oil and the manufacture of fertilizer.

The enterprise was begun in an experimental way in 1879 by the Northwest Trading Company. The company had established a trading station at Killisnoo in 1878. It was observed that a large number of finback whales frequented the waters of that vicinity to feed on the herring, and in 1880 whaling was attempted, but was discontinued the same year. The oil and fertilizer business having been found a profitable one, it was gradually increased until in 1887 the maximum production of 380,000 gallons of oil was reached. The present company

acquired the property in January, 1887. The annual production of oil is from 160,000 gallons to 235,000 gallons and from 700 to 800 tons of fertilizer. The capacity of the works per day of 24 hours is 1,100 gallons of oil and 30 tons of fertilizer, the product of 1,500 barrels of fish. 3 steam tugs of 70, 40, and 12 tons register, and 5 scows, each with an average capacity of 1,300 tons, are used in fishing. 2 fishing gangs of 12 men each are employed in fishing, purse seines being used. The fish are hoisted from the scows into the factory by steam. They are cooked by steam in 12 vats, each of 30 barrels capacity. After cooking 3 hours the pulp is pressed 30 minutes in 4 hydraulic presses at a pressure of 20 tons. From the presses the impure oil runs into 16 steam-heated settling vats, where all impurities settle to the bottom, and the pure oil floating on top is run into barrels for shipment. The stearin is caught by strong cotton strainers placed over the settling vats, from which it is taken, pressed, and prepared for market. It is sold in Portland and San Francisco, and in 1891 20 tons were shipped to Liverpool. After the impure oil is removed by the presses the substance which remains in the presses, locally known as scraps, is shoveled into tram cars and conveyed to the drier, where it is stirred by machinery and subjected to a gentle heat until the moisture is expelled, when the fertilizer is sacked for shipment. The capacity of the drier, 8 tons per day, will soon be increased, as the demand for fertilizer is becoming stronger.

The price of oil has been as low as 14 cents per gallon, but the market has improved in the last few years, ranging from 25 cents to 32.5 cents per gallon. Until 1891 all shipments were made by the Pacific Coast Steamship Company's steamer, but in that year the oil company chartered the English bark *Martha Fisher*, 800 tons. The *Fisher* delivered at Liverpool for a charter price of \$15,000 700 tons of fertilizer, 800 barrels of oil, and 20 tons of stearin.

The business of salting herring was begun by the company in 1888, and 100 barrels were put up; the next year 300 barrels were packed, and in 1890 the demand for this excellent article exceeded the pack of 500 barrels, so that this branch of the business will be increased. Salt herring is marketed in Portland at \$8 per barrel. About 35 white men are employed, nearly all being in and about the factory. White laborers receive from \$40 to \$50 per month and board; skilled men and foremen are paid from \$60 to \$100 per month and board. About 28 natives are employed, chiefly as fishermen and laborers. The former are paid \$1.50 per day and the latter \$1. 2 Chinese are employed as cooks. A considerable number of natives supply the company with over 1,000 cords of spruce and hemlock for fuel. \$2.50 per cord is paid for the former and \$2.25 for the latter variety.

The public day school building at Killisnoo was built by the government in 1888. The maximum attendance (35) during the census year seems very small considering the large native population in the vicinity. A Græco-Russian chapel was built in 1889, and although there is no resident priest, an extraordinary propaganda has been maintained, and a large proportion of the Hoochinoo tribe are nominally converts to that faith. A large part of the whole Hoochinoo tribe is at various times employed by the oil company during the season, which begins about July 15 and ends about January 1, and during that time the native population of Killisnoo is about 100. The larger part of the income of the Hoochinos is derived from the company, and their primitive food supply of fish, game, and berries is largely supplemented by foodstuffs purchased at the company's store. Nearly every family of Hoochinos is provided with a garden, potatoes and turnips being the principal crops. A large number of deerskins are sold to the company.

After very careful inquiry among the Hoochinoo natives I am convinced that Kootsnohoo inlet does not connect with Seymour channel, as shown by the latest charts of the United States coast and geodetic survey. All the information on the subject is to the effect that those water ways are separated by a peninsula of low land, across which the natives frequently portage small canoes.

The native village of Huna, with a population of 438, is situated at Port Frederick, Chichagof island. With the exception of Yakutats, these people are the most primitive of all the Thlingits. They subsist chiefly on fish, game, and berries, and their principal revenue is derived from the sale of fur-seal and sea-otter skins. About 70 men hunt along the coast from Cape Spencer to Dry bay, taking 50 or 60 fur seal and about 40 sea otter each season. A large number of hair-seal and deer skins, a considerable number of brown bear, a few black bear, a large number of mink, some marten, and a few land otter are the other skins taken and sold by this tribe. Their principal market is Juneau.

In 1889 and 1890 the cannery at Bartlett bay employed during 3 months of each year about 17 native men as fishermen, etc., and about 20 men, women, and children in the cannery as fish cutters and can fitters. The cannery proved unprofitable and was abandoned in 1891, and the entire tribe is once more dependent upon the primitive means of livelihood.

Herring, halibut, and black cod are particularly plentiful in the waters about Chichagof island and hair seal are numerous in Glacier bay and from that place westward to Cape Spencer. The little prospecting done on Chichagof island has resulted in the discovery of a number of promising veins carrying gold, silver, and copper. Silver, lead, and gold (quartz) locations have been made about Glacier bay, but little work has been done on them, and their value is very uncertain.

On Chilkat inlet, near the mouth of Chilkat river, are 3 salmon canneries. The Chilkat Canning Company and the Chilkat Packing Company have establishments on the east side of the inlet, and the Pyramid Harbor Packing Company has a plant on the opposite side about 2 miles distant.

The last 2 companies combined after the season of 1890, and during the season of 1891 the latter cannery was closed and the Pyramid Harbor cannery was operated, outputting 26,000 cases. 60 white fishermen, at 8 cents per fish, were employed. 25 Columbia river boats and the same number of gill nets were employed in fishing. 2 steam tugs of 14 and 7 tons net are used for towing. 2 wire fish traps of the ordinary kind were also used in fishing. 45 Chinese were employed in packing, at 46 cents per case. In addition to wages all the employés receive free transportation from San Francisco to the cannery and return. The Chilkat Canning Company packed 20,000 cases in 1891. 55 white fishermen were employed at \$35 per month and board, and a bonus of 2 cents per fish. 20 Columbia river boats and the same number of gill nets were used in catching fish. A steam tug of 80 tons gross is used for towing. 47 Chinese at 48 cents per case were employed in packing. In addition to wages all employés receive free transportation.

The fishing and packing season at these canneries begins about June 15 and ends September 30. The silver salmon weighing 8 or 9 pounds is the best and most plentiful variety of salmon frequenting these waters; there are very few tye or king salmon. The fish are taken in Chilkat inlet chiefly, and in Chilkoot river.

The natives do not permit the whites to fish in the streams. From \$10,000 to \$15,000 is paid to natives each season, nearly all of which is for fish at 10 cents each. A few natives are employed by the Chilkat Canning Company as can fillers and fish cutters, but are not satisfactory workmen. A considerable number of natives were formerly employed as boatmen, but their work was not satisfactory, and whites are now employed in their stead. Each cannery has a store in connection, the trade being almost entirely with the employés. On the east side of the inlet near the Chilkat Canning Company's cannery are 3 trading stores and 2 saloons. The permanent white population of the village does not exceed 25. The Chilkat tribe of 800 Tlingits has 4 permanent villages; Klakwan, the largest, is on the Chilkat river 25 miles from the mouth; Kakwaltoo is a small village 2 miles south of Klakwan; Hindasetukee, at the mouth of Chilkat river, and Chilkoot mission on Chilkoot river about 1 mile from the white village of Chilkat. Probably 200 natives live in cabins near the canneries during the summer months. There is a small summer fishing village at Chilkat lake. A trading station has been established at Taku inlet, and a number of Chilkats and Indians from the interior are transient residents there.

The Chilkats are prosperous, enterprising, and independent. They are chiefly occupied in catching and selling fish to the canneries and in trading with the Stick or interior Indians, with whom they exchange calico, blankets, guns, ammunition, etc., for silver gray, cross, and red fox, black and brown bear, beaver, marten, mink, lynx, wolverine, land otter, and a few other skins. The Chilkats have until recently monopolized this trade, not allowing the Sticks to trade with the whites. Nearly all of the skins purchased by the white traders at Chilkat and a large part of those purchased by the Juneau fur dealers are procured from these native middlemen, the Chilkats. There is not much demand for native labor at \$1.50 per day. About 50 miners outfit at Juneau every spring and go into the interior of Alaska via Taku inlet and Chilkoot pass. From the head of the inlet over the pass to Lake Lindermann is 23 miles. Many of the miners employ Chilkats to pack their outfit over the distance, paying \$13 per hundred pounds for the service.

A mission and school was established at Chilkoot mission in 1881 by the Presbyterian Board of Home Missions, but was soon abandoned. 10 years later another mission and school was established at Chilkat. No quartz claims of certain value have been found in the Chilkat country, though veins carrying gold, silver, and copper have been found.

A small steam sawmill at Berners bay supplies the very limited demand for lumber in the country north of Juneau.

Very little can be said concerning the agricultural capabilities of the district. By reason of the mountainous character of the country but little land is suitable for agriculture. The densely forested ground is very expensive to clear and the excessive rainfall is discouraging, while a large proportion of the white residents are miners, prospectors, and frontiersmen generally, who do not take kindly to the soil unless it contains gold. These conditions will explain why there is not a farm within the census district.

However, a number of gardeners living near the several towns partially supply Sitka, Juneau, and Douglas with vegetables, and it is certain that all the ordinary vegetables and small fruits are or may be grown at Sitka, Juneau, Chilkat, Huna, Killisnoo, and Yakutat. Potatoes, turnips, beets, rutabagas, carrots, radishes, and all root crops are grown to perfection. Lettuce, celery, and such stuff are also of fine quality. I have seen a 10-pound turnip grown at Chilkat, and strawberries 4 inches in circumference. Plum, apple, and cherry trees were planted at Chilkat in 1889 and were growing vigorously 2 years later.

Gardens are planted about May 1 to 15. Radishes are ready for the table in 33 days; lettuce, 36 days; potatoes and turnips, 76 days. Oats, barley, rye, and wheat have ripened at several places, and it is certain that these grains may be successfully grown by planting hardy, early maturing varieties, and then planting the Alaska grown seed, as it has been observed that the grain and vegetables grown from Alaska seeds produce a more hardy and quicker maturing crop than the seeds from the states. A small quantity of hay is cut near Juneau about July 1 to July 5. All kinds of meadow grasses grow luxuriantly. The country seems to be the natural home of the small fruits, as 10 varieties are indigenous. Enormous quantities of cranberries and salmon berries are consumed by the natives. The salmon berries are of 2 kinds, red and yellow, and resemble the finest blackberry in form, size, and flavor.

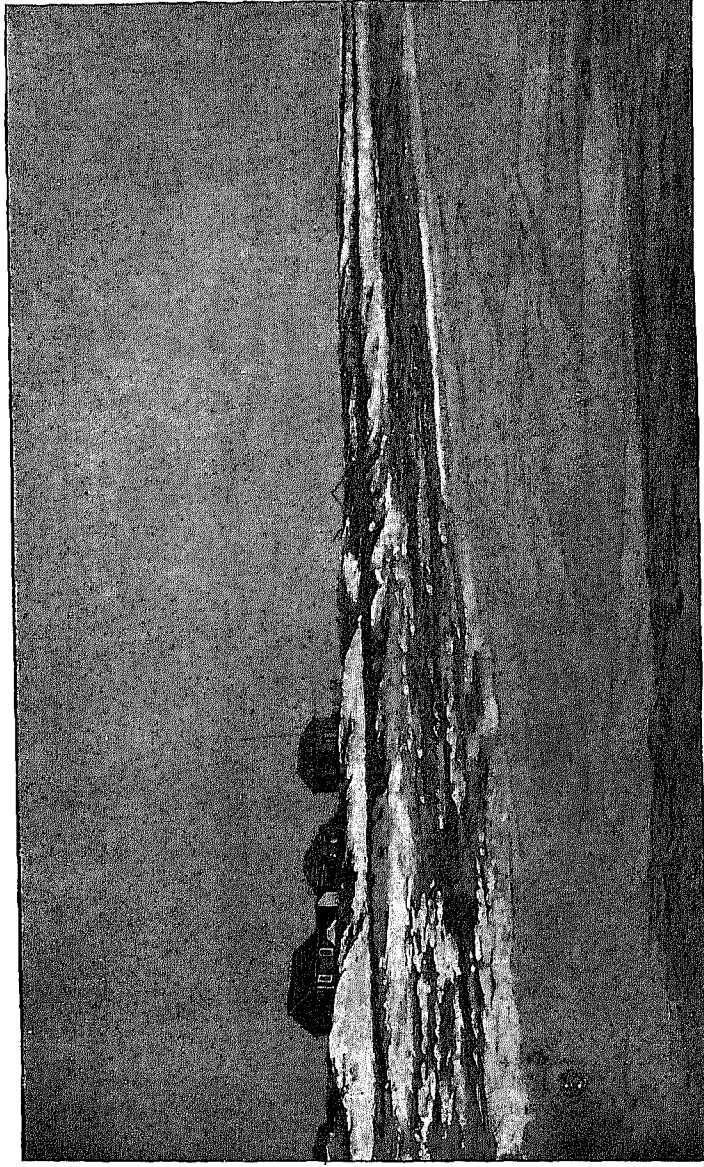
The waters are as well supplied with food fishes as the land is stocked with wild fruits. In addition to salmon, black cod, halibut, and herring are eulachon, rock cod, salmon, trout, flounders, crabs, clams, shrimps, oysters, sea urchins, "sea cucumbers", etc., so that in case of a pinch the Alaskans can live on the country if necessary. The steamships of the Pacific Coast Steamship Company bring mail, freight, and passengers twice a month to Juneau, Douglas, Sitka, and Killisnoo. An excursion steamer carrying passengers and mail is put on the route in summer to accommodate the tourists, who, armed with kodak and notebook, annually invade the wilds of Alaska in ever increasing numbers.

TIMBER.

The mild temperature, heavy rainfall, and long summer days are the causes of the luxuriant vegetation which covers nearly all the district between high tide and timber line. Heavy mosses, luxuriant ferns, dense undergrowth, and forest apparently limitless are characteristics of the coast region. Timber line varies from above 2,500 feet in the southern and southwestern part of the district to 1,800 feet in the Yakutat region. Probably three-fourths of the forest area is occupied by trees too branchy, small, or crooked to be used for lumber. The woods are of excellent quality when free from knots. Spruce and hemlock are the predominant varieties. Most of the best timber is found on comparatively level or gently sloping land and at an altitude not exceeding 600 feet; hence the best timber is on the islands, Baranof, Chichagof, and Admiralty islands having as much lumber stuff as all the 30-mile strip north of Cape Faushaw. The country west of Lynn canal has not much timber suitable for lumber. The trees as compared with those of Puget sound are smaller, more branchy, lacking in length and cylindrical form. Yellow cedar, the most valuable of the woods, grows chiefly on Baranof, Chichagof, and the southern part of Admiralty islands, and on the mainland south of Taku inlet. It is scattered among spruce and hemlock and rarely in groves of 200 or 300 acres in extent. The primitive natives annually killed a large number of the finest yellow cedars by stripping off the bark, of which their summer houses were constructed. Alder, cottonwood, and crab apple are scattered through the forested country and are of slight value. The former is used in the vicinity of the salmon canneries for making charcoal, and it is also a superior wood for fuel. From the crab apple a handsome walking stick is made, which commands a good price from the many tourists who visit southeastern Alaska during the summer months. Red cedar is not abundant. The preparation of hemlock bark for tanning is one of the latest resources of the country.

Eleventh Census of the United States.
Robert P. Porter, Superintendent.

Alaska.



TRADING STATION IN EARLY SPRING.

CHAPTER XVI.

THE COMMERCE OF ALASKA.

Commerce, both intertribal and intercontinental, was carried on in the region now known as Alaska in times prior to the ventures of Cabot, Hudson, and Raleigh on the eastern shores of North America. The commercial instinct seems to be deeply rooted in all our hyperborean tribes. We find it predominating with the Eskimo, but existing also to a more limited extent among the Athapascans inhabiting the higher latitudes.

No sooner had the Cossack adventurers of Russia, endeavoring to escape from the ever tightening yoke of the great white tsar, entered Siberia and advanced in their eastward course from one great river system to the other, than the primitive articles of Muscovite manufacture found their way to the utmost confines of Arctic Asia. Here the pieces of metal, the glass beads, rough cutlery, axes, and knives were eagerly seized upon by the ancestors of the present coast Chukche, and bartered again for skin boats and products of the American continent with the bold Eskimo navigators, who in each successive season made their way across the narrow strait dividing America from Asia.

In due course of time the Asiatics, being superior both intellectually and physically to their eastern neighbors, with whom they intermarried freely, acquired the art of navigation and took the intercontinental traffic into their own hands, as they hold it to-day. For several centuries the interchange of commodities took place on neutral ground, the Diomedé islands, situated in the strait of Bering.

The effects of this traffic were felt throughout northwest America. The earliest visitors to the continental coast, the venturesome Spaniards, Englishmen, Americans, and Frenchmen, found in the possession of aboriginal inhabitants blue beads, pieces of metal, and even metallic implements, the origin of which they were unable to trace. The Russians in their first advance met only the isolated Aleutian islanders, and consequently did not find these articles, which they could easily have recognized, and the counterpart of which were then in their own hands for the purpose of beguiling the harmless Aleut, to awaken his slumbering cupidity, and take from him for a nominal price (and often by force) the precious skins of the sea otter, in search of which the wily sable hunter of the endless Siberian forests had transformed himself into a fearless navigator, explorer, and rover in the distant northern seas.

The English and American ships engaged in the northwest trade dealt almost exclusively with the Thlingit tribes, the only exception being Meares' and Portlock's unsatisfactory intercourse with the Chugachigniut of Prince William sound. Their purchasing medium consisted at first of woolen blankets, pieces of rod and bar iron, beads, and cotton cloth. To these were soon added firearms, flints, powder, lead, and (as an incentive to more active barter) tobacco and rum. Sea-otter skins were the furs most desired, and whenever the quantity obtained was considered sufficiently large, or when the market became temporarily exhausted, the ship was headed for China, sometimes stopping at the Hawaiian islands to complete its cargo with sandalwood for the same market. When the furs had been disposed of directly to Chinese dealers or to English, Dutch, or Portuguese middlemen, teas and other Chinese products were purchased and taken to the United States or Europe by way of Cape Horn or the Cape of Good Hope.

The establishment of the Russian American Company under imperial charter and the extension of its operations eastward to the Alexander archipelago caused a gradual change in the manner of conducting the northwest ventures. The trade was kept up, but it fell entirely into American hands, chiefly of a few Boston firms. So generally was their supremacy in this line of traffic acknowledged that to this day the terms American and Boston man are synonymous among the descendants of the savages who bartered and fought with the famous Boston skippers and their venturesome crews during the last years of the eighteenth century.

The Russians carried with them to the field of the earliest successes gained by the northwest traders their own peculiar methods of obtaining the valuable sea-otter pelts. They brought in their train organized parties of Eskimo

hunters, previously subdued, who were forced to scour the inland channels and vast bays of the labyrinth of islands, exposing their lives to gales and tidal currents, as well as to the attacks of warlike Thlingits, and receiving a nominal compensation for the furs they secured.

Under such altered circumstances the Boston skippers could no longer obtain full cargoes. Several of them were glad to dispose of their trade goods to the Russians, and in this way they discovered that staple provisions, breadstuffs, sugar, lard, and tallow, as well as liquors and tobacco, were always in demand in the Russian settlements, which were then being supplied irregularly from Okhotsk, the price of every pound of provisions or stores being increased by the immense cost of land transportation through Russia and Siberia.

These transactions assumed quite large dimensions, and constituted for long years the bulk of Alaskan, or rather Russian American, commerce, aside from the shipments of furs to Russia and China.

Finding that the ports of the celestial empire were closed to Russian vessels and that shipments through agents under foreign flags rarely resulted in profit to the company, the directors inaugurated an exchange of Alaskan furs for Chinese teas in the Siberian border town of Kiakhla, thus perpetuating and enlarging upon the primitive intercontinental exchange previously existing among the hyperborean denizens of Asia and America.

This trade also grew to large dimensions, being limited only by the fact that the demand for peltries in the Chinese market was confined almost exclusively to fur-seal and land-otter skins, both of which the furriers of the flowery kingdom had learned to pluck and dye as early as the last decade of the eighteenth century, antedating the London process by more than 50 years.

Though under the privileges conferred by its charter the Russian American Company was enabled to send to its colonies large cargoes of goods and supplies by government vessels as well as by its own ships, the wants of the growing settlements were constantly increasing, faster than they could be supplied from the distant home office, and consequently the necessity of making purchases from chance visitors arose from time to time. Frequently it appeared advantageous to purchase both vessel and cargo, in order to recruit the colonial merchant fleet. Such transactions necessitated large payments which could not be met with cash; the political complications existing in Europe at the beginning of this century made bills of exchange an uncertain and unsatisfactory medium, and thus it came to pass that the managers of the Russian company's business on the American coast first resorted to the use of fur-seal skins as a circulating medium. The American northwest traders willingly accepted this currency, which they knew could be disposed of with considerable profit in Chinese ports. The directors of the company in St. Petersburg, however, were not pleased with this mode of paying its bills, chiefly because the large number of skins thus falling into the hands of foreigners affected the fur-seal market and removed its control from their own hands. As soon as affairs in Europe had been restored to a more settled condition peremptory orders were sent to the company's officials in Sitka to discontinue transactions in fur seals in payment of purchases as far as possible.

Circumstances over which the managers of the company had no control prevented strict observance of these orders. From time to time cargoes and ships were purchased and paid for with drafts upon the natural animal reserve fund on the Pribilof islands, which, unlike other deposits, replenished itself from year to year.

One of the Russian company's chief managers reported in 1831 that during the 5 years preceding he had exchanged 87,740 fur-seal skins for goods purchased from foreign vessels and valued at 1,077,913 rubles, making the rate of exchange 12.29 rubles per skin. During the next 5 years 150,725 fur-seal skins were thus used at rates a little higher, and all these skins, not being shipped by the company, remained unaccounted for in the annual statements of the furs obtained from the various districts.

During all this time the barter with the so-called independent natives of the Russian possessions remained very much upon the old footing. In the southeastern section of the territory, where the Hudson Bay Company was beginning to make its influence felt, prices paid to the unruly Thlingit for furs were comparatively high, as much as \$30 worth of trading goods for a sea-otter skin and the equivalent of \$15 for a black fox, but to the more skillful Aleut hunter, operating in the same waters, but being held in a state of partial servitude, but 10 rubles of colonial currency, or \$2, was paid for a prime skin. Foxes, martens, beavers, and land otters were purchased from the "dependent" native for from 20 to 40 cents each, and the quantity and quality of articles which could be purchased with these miserable sums were very much restricted by "sumptuary" regulations.

Among the natives most completely subdued even daily labor was paid for to a great extent in kind, a favorite compensating medium being "parkas" or garments made of the skins of ground squirrels and of aquatic birds. For this purpose parties of old men and boys were detailed to shoot birds and trap squirrels, and the women left at home by these and the absent sea-otter hunters were made to prepare the skins and sew them into garments, to be used in payment of their husbands', fathers', and brothers' services in procuring more valuable skins. Others were made to tan hair-seal and sea-lion hides for covering canoes and to prepare thread from whale sinews and reindeer tendons. All these articles, costing the Russians next to nothing, entered into their transactions with the native tribes, to which, under the circumstances, the term of internal commerce would scarcely be applied; it was simply the most exhaustive exploitation of natives and resources alike.

RUSSIAN TRADE IN COLONIAL PROVISIONS AND SUPPLIES FOR THE YEAR 1860.

ITEMS.	Unit of measure.	Total.	Sitka.	Kadiak.	Atka.	Unalaska.	St. Michael.
Salt salmon	Number	105,135	53,343	31,708	7,639	6,505	5,940
Fresh salmon	do	62,634	20,816	28,528	639	7,093	4,958
Halibut	Pounds	119,360	111,840	6,880	640	.....	.....
Dried salmon	Number	376,589	.....	315,541	14,907	21,879	24,202
Seal meat	Pounds	105,200	.....	12,560	34,680	6,240	51,720
Whale meat	do	132,080	.....	125,240	1,160	6,280	.....
Oil	Gallons	6,856	.....	4,552	500	780	1,024
Seal hides, tanned	Number	4,400	.....	401	219	528	3,162
Seal throat, tanned	do	27,796	.....	73	170	2,025	25,528
Seal gut	Fathoms	34,963	.....	3,917	590	4,035	20,441
Walrus lines (200 feet each) .....	.....	504	.....	36	.....	.....	403
Salt geese	Number	210	.....	210	.....	.....	.....
Potatoes	Pounds	25,060	.....	22,980	2,080	.....	.....
Turnips	do	25,600	.....	20,320	.....	.....	5,280
Berries	Gallons	716	.....	584	.....	.....	132
Wild fowl	Number	1,179	996	.....	137	46	.....
Herring	Kegs	101	93	.....	8	.....	.....
Deer (venison)	Number	402	390	.....	.....	.....	12

The imperial government required the company, invested with almost unlimited control of the country, to pay the native inhabitants for all furs secured by them, and the company complied with the law, but in a manner which placed the transaction upon the footing of scanty compensation for life-long services of both sexes. Under any other circumstances it would have been impossible for the company to maintain its costly fleet of vessels, its small army of high-salaried officials, and numerous office and countinghouse staff, and still to pay its biennial dividends to the shareholders. The military and naval establishment alone would have bankrupted any ordinary business firm carrying on a legitimate trade open to competition.

As time progressed the methods of the Russian American Company, the only commercial factor of that period, were modified to meet enlarged and altered requirements. The ships of the privileged corporation, on their inward and outward voyages between Cronstadt and the American settlements, called at the various seaports of South America, and connections were formed resulting in exchange of commodities. Sugar, breadstuffs, rum, and brandy were purchased for the colonies, and coffee, sugar, and indigo carried back to Russia. Some articles of Russian manufacture were received in payment for the former, and experimental sales of natural products of the Russian settlements (lumber, spars, and fish) were made as an offset for the latter.

Among the first countries to enter into mercantile intercourse with the Russian possessions in America were California, then a province of Spanish Mexico, and the Hawaiian kingdom. California furnished corn, dried beef, and tallow (the Spanish word for which, "manteca", is still current among the older semicivilized inhabitants), for which Russian goods (tools, implements, and ironware) were received in return. From the Sandwich islands many cargoes of tara root, cocoanuts, and salt were received in times of great scarcity of provisions, to take the place of Russian rye meal or the unground wheat and corn of the California missionary fathers.

Under the régime of Baranof, the father of the Russian colonies, an attempt was made to settle permanently upon the Sandwich islands, with a view of engaging in agriculture, the manufacture of salt, and the trade in sandalwood with China. These plans finally miscarried through failure on the part of the Russian government to back up the company's enterprise, but a limited intercourse was always maintained, consisting of shipments of lumber and fish to Honolulu and of return cargoes of trading goods and provisions, each of these ventures leaving a handsome cash balance to the credit of the Russian firm.

These transactions relieved the directors of the Russian company of many heavy payments and raised hopes among the shareholders which were never to be realized, as with the discovery of gold in California a rival commercial factor sprang into existence on the Pacific coast, which speedily outgrew such encumbered competition as the Russian firm, separated from its headquarters and base of supplies by half the globe, was prepared to maintain.

For a few brief years the company reaped a golden harvest, unloading the accumulation of shopworn goods of several generations into the ever-wanting market of the new gold fields, but before the stock on hand became exhausted American merchandise began to pour into San Francisco on barks and ships, under steam and sail, around the Horn and by way of the Isthmus, and the Russian company's opportunity was at an end.

In this circumscribed condition the commerce of Russian America remained until the early "fifties", when the traffic in ice was added to its volume, San Francisco being the market for this natural product. This was before the days of artificial ice, and the company's managers entertained just hopes of a gradual development of the industry, dreaming of exchanging the product of cheap water and cheaper frost for the silver piasters of the panting cities of Central and South America. Advancing science spoiled these plans, but the traffic in ice with San Francisco was still active when Russia's possessions in North America were transferred to the United States.

The commerce once carried on in Russian America under the auspices of the almost sovereign company presents one remarkable feature, the important part played in its volume by the tea trade with China. From the official balance sheet of the company for the 10 years from 1850 to 1859, inserted here, it would appear that but for the secondary transaction in tea the company would have handled its rich harvest of priceless furs at an actual loss. From the same statement we ascertain that the only revenue derived by the Russian government from its American possessions consisted of the duties paid on tea purchased with Alaskan furs.

RECEIPTS FROM FURS AND MERCHANDISE AND EXPENDITURES OF THE RUSSIAN AMERICAN COMPANY FOR 10 YEARS
FROM 1850 TO 1859.

ITEMS.	Total.	1850	1851	1852	1853	1854	1855	1856	1857	1858	1859
Maintenance of colonies	\$1,716,150	\$182,184	\$171,905	\$96,717	\$139,078	\$170,786	\$185,721	\$160,830	\$190,980	\$213,852	\$198,043
Maintenance of churches and clergy	53,795	5,792	5,792	.....	5,685	5,532	5,417	5,604	5,604	6,960	7,400
Maintenance of benevolent institutions	107,524	12,090	12,099	5,518	10,466	10,031	9,907	10,509	11,141	11,519	13,635
Pensions and education in Russia	73,674	8,827	9,689	9,450	9,442	8,601	5,672	6,802	5,679	4,557	4,955
Collection of furs	706,782	72,008	51,893	131,665	65,705	52,001	60,408	25,173	71,904	61,917	113,988
Freight and packing	160,272	15,003	17,564	18,065	3,809	16,781	6,138	22,848	24,342	18,084	17,938
Insurance on furs	54,257	3,816	5,262	7,248	7,299	4,875	.....	.....	5,688	10,080	10,030
Transportation of employes	272,174	21,900	18,586	18,067	28,147	23,747	29,512	28,654	34,914	33,509	34,538
Maintenance of administration	806,479	71,098	65,974	65,608	87,709	74,977	82,097	82,732	94,715	88,819	92,150
Total	3,951,113	393,417	358,794	352,938	357,340	373,931	384,932	343,152	444,967	440,847	491,795
Furs traded and sold	3,171,474	383,118	259,315	424,898	198,181	250,993	302,338	199,629	451,869	315,880	382,744
Profit .....	.....	.....	.....	71,400	.....	.....	.....	.....	6,902	.....	.....
Loss	779,639	10,299	99,479	.....	159,159	113,938	82,594	149,523	.....	133,958	109,051
Profit on goods sold in colonies	694,687	86,904	67,198	40,800	51,594	51,444	38,796	84,562	113,103	70,500	80,076
Total profit .....	.....	76,005	.....	121,260	.....	.....	.....	.....	120,005	.....	.....
Total loss	85,002	.....	32,281	.....	107,565	62,494	43,798	64,961	.....	63,398	28,375

TEA TRADE OF THE RUSSIAN AMERICAN COMPANY FOR 10 YEARS, FROM 1850 TO 1859.

ITEMS.	Total.	1850	1851	1852	1853	1854	1855	1856	1857	1858	1859
Purchase price of tea	\$2,974,000	\$142,647	\$147,258	\$223,152	\$349,509	\$337,861	\$206,827	\$483,508	\$213,980	\$418,425	\$450,773
Duties on tea	1,323,418	91,177	121,288	168,742	66,063	89,019	122,737	173,845	44,210	221,082	225,255
Freight and packing	440,178	51,342	52,541	64,220	18,917	33,894	45,096	42,297	19,338	54,786	57,147
Insurance	108,515	7,632	10,524	14,496	14,598	9,750	.....	.....	11,375	20,061	20,076
Total	4,846,111	292,798	331,611	470,610	449,147	470,524	375,260	699,650	288,903	714,354	753,254
Sales of tea	6,083,405	297,282	385,005	516,505	605,347	663,408	476,922	992,763	296,016	808,883	920,674
Profit	1,237,294	4,484	53,394	45,895	216,200	192,884	101,662	293,113	7,113	154,529	167,420

DR.

BALANCE SHEET FOR 10 YEARS, FROM 1850 TO 1859.

CR.

Losses in war time	\$99,609	Profit on tea in 10 years	\$1,237,294
Payment of dividends	1,015,953	Loss on furs in 10 years	85,002
Payment of sinking fund	101,595	Remaining profit	1,152,292
Payment of benevolent fund	5,080	Other transactions, profit	127,077
Payment for buildings	57,732	Total receipts	1,279,969
Total expenditures	1,279,969		

Subsequent to the inauguration of the ice business the Russian American Company attempted to develop the lignite coal veins on Cook inlet with a view to lessening the running expense of their own steamers as well as to add another article of export to the resources of the colonies. Large sums were sunk in this enterprise without creating a demand for the coal, which was used only by the company's own vessels under protest from the engineers and captains, who soon discovered that the saving in the price of the fuel was out of proportion to the increased expenditure for repairs to boilers and furnaces and time lost through wasted power. A few tottering log buildings, abandoned shafts, hoisting and pump houses, and a stone pier remain as monuments of misdirected energy. Even to this day coal has not yet taken its place in Alaskan commerce except as an article of import.

Through all these years the internal commerce of Russian America, the trade with the natives, though valuable to the company in its results, was quite insignificant as to the cost and quantity of goods thereby disposed of. In fact, by far the greater part of the goods and supplies imported by the Russian company was sold to its own employes and charged to their accounts. The system of buying and selling on credit, as it exists

here between employer and employé, always leads to extravagance on the part of the latter, which is fostered by the former in order to relieve himself as much as possible of cash payments for salaries. The Russian American Company, with its numerous retinue of servants and officials, presented no exception to this rule. Fully three-fourths of its personnel either saved nothing or became indebted to the firm. When this happened to any of the higher class of employés they were relieved and sent back to Russia, but the common laborers were kept in the territory from one 7 years' term to another, with their debt hanging over them and laboring for the company for their mere subsistence as long as life lasted.

This was the state of affairs when the Russian emperor decided to abandon his American possessions. With the thunder of guns, the raising and lowering of flags, one rainy October day in 1867 a new era was inaugurated; the field was open to all alike. The military force of the United States which had been dispatched to assume charge of Alaska had no sooner landed at Sitka than an eager crowd of merchants and traders, prospectors and speculators, came ashore from steamers and sailing craft which had been awaiting the formal transfer to begin operations. Lots were staked out without much regard for prior occupancy; houses and huts were purchased at extravagant rates. The newcomers saw the magazines of the Russian company overflowing with goods and peltries, the few streets crowded with Russians and half-breeds with money in their pockets, and they naturally came to the conclusion that they had struck a bonanza. They made their arrangements for conducting business on a large scale and ordered up increased supplies from California and Oregon. These jubilant pioneers did not know then that the goods in the warehouse represented a 5 years' supply for the whole country, which was always kept on hand at Sitka. They did not know that the hundreds of eager buyers of their wares had been gathered from all parts of the Russian possessions only to be returned to their homes, and that the coin they were spending so freely represented the savings of long years and the only cash payment the company's servants and officers had ever received during their voluntary exile from Russia.

The commercial transactions of these early days in Sitka were quite large, but no record was kept, nor is any standard now available by which to estimate their volume. Several American firms competed with each other in their efforts to secure the stock and improvements of the Russian company as a whole, and thereby to step into the shoes of the former lords of the country. The shareholders of the San Francisco Ice Company, which had been associated with the Russians for many years, relying too much upon verbal promises, allowed themselves to be overreached by shrewder men, and were obliged to be satisfied with their ice plant at Kadiak, with its incidental trade.

When the feverish local trade at Sitka began to subside with the departure of the Russian employés with the residue of their money, the merchants turned their attention to traffic with the natives of the country, only to find themselves confronted by a state of affairs entirely new to them. The Russian system had failed to prepare the aboriginal inhabitants for commercial intercourse upon a business basis; they were accustomed to satisfy their limited wants on long credit, knowing that each fur or package of skins must be delivered at a certain station in order to secure the issuance of such supplies as the trader thought good for them. They had handled no money and had never been allowed to buy freely of what they wanted. Now dealers from the states came to the natives with cash in hand, offering prices which allowed them to purchase liberally of the most tempting wares. The native had never been given an opportunity to exercise discretion, and bewildered by the first onslaught of fierce competition he squandered large sums for useless articles without the least appreciation of the value of either goods or money.

A few years of this reign of extravagance sufficed to temporarily exhaust the resources of both buyers and sellers and a reaction set in, which left the native in a condition to long for his former state of irresponsibility and blind reliance upon the "company" as a last resort in every ill. In the meantime a few far-seeing individuals had secured possession of the Russian company's central stations to the westward of Sitka, establishing there, as competition subsided, a system of dealing with the natives based upon the Russian principle in so far as they supplied their hunters on credit and assisted them in distress, provided they sold their furs to them alone. From this association sprang the Alaska Commercial Company, which established itself upon a permanent basis, safe from all competition, when it obtained the lease of the Pribilof islands in 1870.

During the first decade subsequent to the granting of the lease the commerce of Alaska was almost wholly in the hands of the Alaska Commercial Company, whose stations dotted the coast and interior, with the exception of the Alexander archipelago, which had then sunk back into utter insignificance. The local trade of Sitka, stimulated by the presence of a ship of war and the transient traffic of Wrangell with the Stikine mines, made up the whole of it. In the central and western portion of the territory a single Anglo-Californian corporation began to operate in opposition to the Alaska Commercial Company during the last years of the decade. At the same time the whale ships began to collect furs and ivory on the coasts of the Arctic and of Bering sea and to reap some benefit from the intercontinental traffic between Eskimo and Chukche. From its beginning to within a few years past contraband wares, breech-loading arms and ammunition and rum, entered largely into this trade, which then brought large profits to the dealer and utter ruin to the native.

The decade from 1881 to 1890 has witnessed a wonderful development of Alaskan commerce in consequence of the discovery of valuable gold mines in the Southeastern district and on the tributaries of the Upper Yukon and

of the extension of the salmon canning industry from its small nucleus at Sitka and Klawak to between 30 and 40 factories, furnishing more than one-half of the world's demand for salmon, while their capacity and sources of supply are sufficient to permit of quadrupling the present production. There is scarcely one of these fishing stations without its store, doing a certain amount of trade and increasing by so much Alaska's internal commerce, while the wants of the fishermen and employes help to swell the volume of importations from other parts of the United States. A few surface diggings on the Yukon river have caused a greater development of commerce on our greatest northern river in less than 10 years than was brought about by half a century of fur trade, and the future holds out the promise of still further growth should the salmon of the Yukon river ever be made available for the market.

In the year 1880 the shipments of furs and fish from Alaska were made by less than half a dozen firms; the special schedules for the fur trade collected for the Eleventh Census show 33 shippers, representing more than three times that number of trading stations.

FURS OBTAINED FROM ALASKA IN 1889 AND 1890, EXCLUSIVE OF FUR-SEAL SKINS FROM PRIBILOF ISLANDS.

NUMBER OF SCHEDULE.	BEAR.			Beaver.	Ermine.	FOX.			Fur seal.	Land otter.	Lynx.	Martens.	Mink.	Musk- rat.	Rein- deer.	Sea otter.	Wolf.	Wolverine.
	Black.	Brown.	Polar.			Black or silver.	Cross.	Red.										
Total.	3,842	1,146	22	7,575	1,461	1,112	1,807	21,083	28,078	3,262	1,631	27,561	70,559	18,146	6	3,724	216	834
1.	109	101		1,012		47	73	35	1,320	228	196	290	1,316			21	12	51
2.	877	169		1,921	630	373	496	9,832	3,103	1,033	408	12,032	27,415	8,969	4	1,635	15	17
3.	60	84		12	630	191	206	208	14,172	238	8	44	113	32	2	517	1	6
4.	a300	50		200		30	120			115		250	4,000			1	75	180
5.	817	85		1,909		182	290	9,024	2,715	795	400	11,988	27,302	8,937		1,118	14	11
6.	65			35					38	16			1,000			1		
7.	a30	3		1						12		6	395					
8.	47	62		245		20	56	100	14	36	61	267	265			38	5	63
9.		28		14						34			123					
10.	42	11		33						38		122	720				1	
11.	a2			2					2	10		6	100				2	
12.	21	15			160	3	21	26	612	64	2	56	840	65		15	2	3
13.	195	223		833		71	176	340	12	98	169	1,273	1,188			45	25	176
14.	a20			100						50			800					
15.	70			30					11	57		20	662				11	3
16.	a1	18								4		10	40					
17.	a30			10						4		1	24					1
18.	497	37		249		2				137		172	2,120				13	124
19.	7	10		2			10	8	65	44			92				1	44
20.	a6	5		15			10	26	4	5	6	12	12				2	25
21.	21	27		197		12	55	5	38	9	35	140	29			5	5	13
22.	484	45		95			7			59		68	1,042			1	7	7
23.	90	43		230		6	60	220	35	46	110	190					12	60
24.	(a)					2						90						
25.	30	25		400		49	48	115		18	45	500	150				13	50
26.	a4	2	22				2	68			65		110			14		
27.	1					3	11	6	337	9								
28.	(a)	8			41	26	53	58		29						9		
29.		14				67	66	135	500	67						100		
30.	7	11		30		4	16	36		7	6	24	101	143		4		
31.								120	60							60		
32.		10				21	21	100	40							50		
33.						3	10	15								90		

a For a year only.

FURS OBTAINED FROM ALASKA IN 1889 AND 1890, EXCLUSIVE
OF FUR-SEAL SKINS FROM PRIBILOF ISLANDS—Continued.

NUMBER OF SCHEDULE.	Deerskins.	Hair seal.	Sea-otter cubs.	Mountain sheep.	White fox.
Total ..	21,450	6,944	218	75	524
2.....			100		
5.....			100		
7.....	2,500	150			
9.....	1,719	257			
10.....	960	30		22	
11.....	600	100			
12.....	7,230	2,000			
13.....	3,753	2,986			
14.....	1,000	400			
15.....	1,057				
16.....	300	170			
17.....	110	86		10	
18.....	1,630	705		43	
20.....					524

KINDS OF FUR.	Number.	Value.
Grand total	216,285	\$1,500,053.50
Total	187,065	1,454,957.75
Black bear.....	3,842	134,470.00
Brown bear.....	1,146	20,028.00
Polar bear.....	22	660.00
Beaver.....	7,575	90,900.00
Ermine.....	1,461	730.50
Black or silver fox.....	1,112	83,400.00
Cross fox.....	1,807	10,842.00
Red fox.....	21,088	42,166.00
Fur seal.....	23,078	415,404.00
Land otter.....	3,262	29,358.00
Lynx.....	1,681	9,786.00
Marten.....	27,561	137,805.00
Mink.....	70,569	62,919.25
Muskrat.....	18,146	9,073.00
Reindeer.....	6	12.00
Sea otter.....	3,724	409,640.00
Wolf.....	216	2,160.00
Wolverine.....	834	5,004.00
Total	20,220	45,695.75
Deerskins	21,450	26,823.75
Hair seal	6,944	13,838.00
Sea-otter cubs	218	1,090.00
Mountain sheep.....	75	750.00
White fox.....	524	3,144.00

The fact that the commerce of Alaska is chiefly in the hands of periodical visitors and nonresidents makes the collection of satisfactory and exact data very difficult. Much of the business is conducted beyond the limits of observation and frequently through concealed channels, and throughout the territory the investigator (especially if he be a government official) finds himself confronted by a general unwillingness to furnish information. Under such circumstances, aggravated by the vast distances between trade centers, the general inaccessibility of the country, and the absence of comfortable or even safe means of transportation, not only the greatest persistence and diligence but also much tact and management were required to obtain the figures for the tables accompanying this chapter. It can not be claimed that they contain all of Alaska's commerce, but they furnish all the information thus far made accessible, and they do not go beyond established facts.

The number of stores of general merchandise and trading stations, operating either throughout the year or during the fishing season, is 126, distributed in the various districts as follows:

First district—Tongass, 1; Metlakahtla, 1; Loring, 1; Klawak, 1; Tongass narrows, 1; Chican, 1; Cape Fox, 1; Wrangell, 6; Juneau, 11; Sumdum, 1; Burroughs bay, 1; Labouchere, 1; Douglas city, 6; Killisnoo, 1; Chilkat, 3; Berners bay, 1; Pyramid harbor, 1; Huna, 1; Fish bay, 1; Sitka, 6; Yess bay, 1; Yakutat, 1—total, 49.

Second district—Cape Martin, 1; Nuchek, 1; Odiak, 2; Chenega, 1; Tatitlak, 1; English bay, 1; Treadwell, 1; Kenai, 1; Kinik, 1; Toyonok, 1; Iliamna, 1; Douglas, 1; Katmai, 1; Wrangell bay, 1; Karluk, 5; Afognak, 2; Kadiak, 3; Eagle harbor, 1; Kaguyak, 1; Alitak, 2—total, 29.

Third district—Pirate cove, 1; Unga, 2; Simeonof, 1; Belkovsky, 2; Sannak, 3; Morzhovoi, 1; Thin point, 1; Borka, 1; Unalaska, 1; Chernovsky, 1; Umnak, 1; Atka, 1; Attn, 1; St. Paul, 1; St. George, 1; Dutch harbor, 1—total, 20.

Fourth district—Ugashik, 2; Pakwik, 2; Nushagak, 5; Togiak, 1—total, 10.

Fifth district—Lomavigamiut, 1; Bethel, 1; Muntrekhiagamiut, 1; Kolmakovsky, 1; Dununuk, 1—total, 5.

Sixth district—Nuklukayet, 1; Anvik, 1; Nowikaket, 1; Andreafsky, 1; Kotlik, 1; St. Michael, 1; Unalaklik, 1—total, 7.

Seventh district—Golofnin bay, 1; Port Clarence, 2; Prince of Wales, 1; Point Hope, 1; Point Barrow, 1—total, 6.

The supply station for the Yukon mines is located on British soil, though the goods and supplies are brought from the United States.

The commerce of Alaska is now carried on almost wholly with the cities of San Francisco, California, and Portland, Oregon, and to a limited extent (about 6 per centum of its total volume) with Puget sound ports. Some heavy freight, chiefly machinery, comes directly from Chicago and St. Paul by the Northern Pacific railway, and the only foreign importations entering the territory through legitimate channels are fresh meats and provisions from Victoria and coal from Nanaimo and Departure bay, British Columbia.

The peculiar topography of southeastern Alaska, with its innumerable unsurveyed and intricate channels and secluded bays and coves, together with its indefinite boundary line, present the greatest inducement and facilities for contraband trade in such articles as the British Columbia trade centers can supply. Smuggling operations will be carried on here as long as there is a demand for dutiable goods; to suppress the traffic a large fleet of swift revenue cutters would be required. Thus far, however, contraband trade is confined chiefly to the secret importations of liquors and the exchange of Alaskan furs for British goods between native tribes inhabiting the coast.

Another branch of commerce existing only in the southeastern district is the trade of "curios" and skins, carried on by the natives with the tourists visiting that section every summer. The governor of Alaska, in his report for the year ending June 30, 1891, estimates the volume of this trade as \$25,000, but in view of the fact that the tourists number about 5,000, the majority of whom are well-to-do and anxious to secure mementos of their trip to the far northwest, the estimate is considered too low. This branch of the trade embraces also the lower grade of skins which traders refuse to buy, but which are easily disposed of to the eager tourist at twice their market price.

This branch of trade, though of some importance now, can not be considered a permanent element of Alaskan commerce. All carvings in wood or stone, originally manufactured for their own use by the natives, have long since been sold, and what is offered to visitors now is the result of patient labor of the preceding winter season. The articles and utensils are made more gaudy and grotesque each year to catch the tourist's eye; as ethnological specimens they are no longer of the slightest value. The people of several villages devote themselves exclusively to the manufacture of curios, and several individuals make a specialty of producing specimens of any degree of antiquity desired. As the excursions to Alaska are expensive and not likely to be repeated by the same parties, many years will probably elapse before the general public will become aware of the imposition, and in the meantime the curio trade will flourish.

Of the 49 stores and stations of the first district, the majority are supplied by the steamers of the Pacific Coast Steamship Company, making regular trips and carrying the mail. The Klawak canning establishment is supplied by a chartered sailing vessel, which also takes away the canned salmon and furs. The Killisnoo Oil and Guano Company have made a beginning of shipping their product by large sailing vessels, and occasionally a schooner is chartered to take freight to Wrangell. The subordinate stations are supplied by small craft owned in the district.

A very important branch of business in southeastern Alaska is the excursionist or tourist traffic conducted by the Pacific Coast Steamship Company, whose headquarters are at San Francisco. This firm reported the following sales of excursion tickets since the inauguration of the enterprise in 1884:

YEARS.	PASSENGERS.	
	Wholes.	Halves.
Total	25, 048	418
1884	1, 650	126
1885	1, 871	62
1886	2, 753	8
1887	3, 880	50
1888	4, 446	59
1889	5, 432	52
1890	5, 007	61

When we consider that the average price of these excursion tickets is \$100, footing up over \$2,500,000 in the seven years, and that from \$50 to \$100 each is expended in addition by more than half the tourists for "curios", furs, etc., the magnitude of this interest becomes apparent.

With the employment of swift and safe steamers these excursions could probably be extended to other sections of Alaska, the magnificent scenery of which has thus far been admired only by a mere handful of explorers, prospectors, traders, and fishermen.

In the second district the 29 stations and trading stores are supplied by steamers and sailing craft owned or chartered either by the Alaska Commercial Company, the North American Commercial Company, or by the various salmon canning firms.

The trade within the district has been and is still to a considerable extent being conducted on the old Russian credit system. Especially was this the case during the years of fierce competition between the Alaska Commercial Company and its former rival, the Western Fur and Trading Company, which extended into the last decade. In those days the indebtedness of the semicivilized natives of the western islands and seaboard increased until it exceeded \$100,000, or over \$500 for every hunter or head of a family among them. At the same time the scattered white hunters were lavishly supplied with "outfits", comfortable houses, and native hunting parties, all on long credit, in order to secure their trade and custom. In the year 1883 the less powerful firm succumbed, selling its stock of furs and goods on hand, throwing into the bargain buildings, wharves, and some of the smaller local shipping. Then only it became possible for the Alaska Commercial Company to inaugurate a system of more economical management and to make a beginning of collecting the heavy liabilities incurred by native and white hunters alike.

Persistent efforts and strict vigilance have succeeded in reducing materially this formidable indebtedness, which by the insufficiently informed general public was made a reproach to the firm, while in reality it was but a legacy left by the Russian trading firm which formerly controlled Alaska.

The continuous cropping up of private competition at various points of the district frequently hampered the Alaska Commercial Company in their struggle to re-establish their enterprise upon a business basis. Their trade was shared to a greater degree from year to year by newcomers, who had no capital invested in the country, and who refused to share in the burden of assisting the improvident natives in seasons of scarcity, and finally, with the inauguration of the salmon industry and the establishment of numerous trading stations, which as mere adjuncts of the canneries were under but little expense, the struggle became hopeless. Consequently there is but little order and system in the internal trade of this central section of Alaska to-day; it is "everybody for himself", and it has become next to impossible to calculate with any degree of certainty the amount of trade to be done at any given point.

Until recently Kadiak settlement (or St. Paul harbor) was the center and distributing point of this district, from which all outlying stations were supplied, and for this reason a United States customhouse was established there, in charge of a deputy collector of customs, at which all vessels bringing cargoes and passengers from other coastwise districts were obliged to enter and clear. In those days it was possible to obtain correct returns of the volume of trade and navigation, but since the rapid development of the salmon industry the Treasury Department has adopted the custom of issuing special permits to vessels bound to western and central Alaska, relieving them of the obligation to enter or clear at the nearest customhouse, and thus it has become impracticable to collect satisfactory statistics of a traffic which is no longer kept distinct as to destination at the shipping ports of California, Oregon, and Washington.

In this district, also, the presence of quite a fleet of American and foreign sailing craft has led to illegal traffic, especially at the points of rendezvous designated annually by the firms engaged in this industry for the purpose of refitting their vessels, and to transfer the so-called "spring catch" of seal skins to some British steamer for transmission to Victoria, British Columbia. During the first few years of pelagic sealing, Humboldt harbor or Sand point, on Popof island, was the meeting point, much to the advantage of the trading station maintained there by a San Francisco firm in connection with its cod-fishing enterprise. In order to prevent this open violation of our treasury regulations a customhouse was erected at Sand point and a deputy collector appointed for the station, with the result that in 1891 the exchange of cargoes between a British steamer and a fleet of schooners under sail and steam, and mostly flying the British flag, took place in the harbor of Alitak, on Kadiak island. Still later the attempt to accomplish the illegal transfer in the harbor of Nuchek, in Prince William sound, resulted in the seizure of the Victoria steamer Coquitlan.

The fur trade with the natives on Prince William sound, the easternmost section of this district, has become quite insignificant with the almost total disappearance of the sea otter from these waters. Small as is its volume, the trade is shared by the Alaska Commercial Company, 2 salmon canning establishments, and several private traders. The land furs brought to the coast by the Atna or Copper river Indians form quite an important element of this trade.

On the shores of Cook inlet all trade formerly centered at the station of Kenai or Fort St. Nicholas, which, under Russian rule, drained a vast region of its furs. It is but little more than a quarter of a century since 10,000 beaver skins, brought from the interior beyond the coast range of mountains, were shipped from this point in a

single year. When the trade of this region fell into the hands of the Alaska Commercial Company, Kenai still remained the chief station, with subordinate stores at English bay, Iliamna, Toyonok, and Kinik, and at each of these points rival stations were maintained during the years of competition with the Western Fur and Trading Company. Now the post of Kenai or St. Nicholas, after an existence of a full century, is shorn of its glory. The store has fallen into the hands of the Northern Packing Company, and the trade of Cook inlet is divided between fishing firms and private traders and coal prospectors, with profits cut down to the lowest notch by fierce competition, and the number of furs secured decreasing from year to year. The post of Alexandrovsk, on English bay, is now the only station on the inlet controlled directly by the Alaska Commercial Company.

On Kadiak island the field of trade with the natives and other inhabitants is fully occupied or rather overcrowded by 3 commercial firms, closely pressed by the encroachment of fishing companies. At the main settlement, on St. Paul harbor, 3 well-stocked stores are struggling for their share in the profits, each having subordinate stations in outlying villages. The volume of trade with the natives depends almost wholly upon the number of sea otters secured by them, and as these animals are becoming more scarce from year to year the future prospects of their trade can not be said to be very encouraging, and the wages earned by natives who are fortunate enough to obtain employment in the canneries now furnish the principal barrier between them and threatening pauperism.

In the third district the trade with natives has been divided between several firms even from the earlier years of American occupation. On the islands of the Shumagin group and upon the lonely rocks of the Chernobura reef the first white sea-otter hunters made a lodgment, and at the same time the cod-fishing firms of San Francisco extended their operations, establishing stations and striving to gather in as many sea-otter skins as could be diverted from their regular course, which should have landed them in the magazines of the Alaska Commercial Company. When the Treasury Department at Washington exercised full control over Alaska a rule was made permitting only natives of the territory to kill fur-bearing animals on land or sea. It was found advisable, however, to exempt from the observance of this rule such white men as were lawfully married to native women and permanently settled in the country. These men carried on their business chiefly in this district and made their winter homes on Unga island, forming a basis for a local traffic, which during the flush times of sea-otter hunting was quite profitable in itself; they purchased small schooners and scoured the more distant and inaccessible hunting grounds which the natives could not reach unaided in their canoes. A number of cod fishermen also joined this colony, which still exists, though in circumstances somewhat reduced by the growing scarcity of sea otters. For the past few years the local trade of Unga has been somewhat stimulated by the opening of 2 mines of gold-bearing quartz near Delarof bay, and as 1 of them promises to be a permanent and paying institution, the 3 firms now trading in this vicinity may hope for prosperity in the future, based upon the finny treasures of the deep and auriferous ledges of the rocky isles.

The island of Sannak and adjoining reefs, formerly looked upon as a strict reserve from which the most abundant harvest of sea otters was gathered by native hunters controlled by the Alaska Commercial Company, have long since been invaded by the fishing firms and private hunters, many of the latter making their homes at the village of Belkovsky, on the mainland adjoining. The trade of this region, which is quite important, has been shared by several San Francisco firms, which of late years furnished their hunting and trading vessels with steam launches to secure their share of immediate gain from the more rapid destruction of the sea otter. The few salmon canneries in this section of the district have not thus far become factors in the local traffic.

The central seaport and distributing and receiving point for this district, as well as for the 3 others bordering upon Bering sea, is the port of Unalaska, on the island of the same name. This sheltered harbor has been the site of a customhouse since the district of Alaska was organized, and, though the village has not increased in population, its volume of shipping is growing constantly, and it now stands foremost in importance among Alaskan ports. During the period of competition in the fur trade, previously referred to, which ended in 1883, the headquarters of 2 wealthy firms were located here, and the native inhabitants divided their allegiance and patronage in accordance with the inducements held out by the rival firms.

Situated as it is, almost in the direct route from San Francisco to the Arctic, Unalaska was soon utilized by the whaling ships as a port of call and a place to refit, to receive and send mail and to ship their earlier catch of whalebone. Government ships of the navy and revenue marine also make use of this harbor to coal and refit and to collect and forward their mail. During the last 2 seasons, owing to the presence of the English and American protective fleet in Bering sea, scarcely a day has passed in Unalaska harbor without several arrivals or departures under steam or sail. Both squadrons relied upon this port to replenish their bunkers, and a prominent object in the outer harbor was a huge British steamship bearing the sign in large letters of "Her Majesty's Coal Store".

Heretofore the only wharf accessible to large ships in Unalaska was the property of the Alaska Commercial Company, which firm derived a moderate revenue from wharfage and water charges, but in 1891 the present lessees of the Fur Seal islands, the North American Commercial Company, began the construction of a wharf and coal depot at an anchorage within the bay known as Dutch harbor (Holland harbor of the Russians), which is now completed.

The Alaska Commercial Company's office at Unalaska includes in its operations the supplying of goods to the continental trading districts of Nushagak, the Kuskokwim, and the Yukon, as well as the subordinate stations on the Shumagin and Aleutian islands, and altogether the volume of trade and traffic transacted at this point assumes dimensions entirely out of proportion with its modest appearance and insignificant population. We must remember, however, that the principals who invest their money here, and who gain or lose by their vast and manifold operations, reside in California, and that but an infinitesimal fraction of the money earned here falls into the hands of residents of this rugged little seaport of the far northwest.

In the flush times of hunting, now gone by, the returning natives received and speedily squandered large sums of money, but now, after the "outfit" is paid for, a portion of the old indebtedness liquidated, and the Russian church remembered, there remains but little cash in the hunter's hand, and he is glad enough to make both ends meet, after a fashion, with the help of wages earned during his absence by the women and girls handling cargoes and laboriously trucking coal out of ships and ballast into them. When the season is over the company's agent, the representative of capital, returns to California and its luxuries and enjoyments, while the native laborers, unused to habits of thrift, huddle together in their squalid huts, with every prospect of suffering want before the approach of tardy spring, unless the company kindly helps them out.

The trade with the natives of the Seal islands, amounting in normal seasons to \$30,000 or \$35,000, is of course in the hands of the lessees, who conduct it directly from San Francisco.

In the fourth or Nushagak district the number of trading stations is small, and would be still smaller were it not for the spasmodic traffic indulged in by the fishing companies located on Bristol bay. The bulk of the fur trade of this section has been from the beginning of American occupation and still is to a great extent in the hands of a single man, an independent agent of the Alaska Commercial Company, who, possessed of more than usual energy and ability, succeeded in extending his operations into adjoining districts, and though no sea otters frequent the waters of Bristol bay, he managed to inspire the Eskimo denizens of the Togiak river and lake system with sufficient energy to undertake a tedious annual migration eastward to the distant shores of Cook inlet, whence they return with from 50 to 100 of the precious skins.

In former times walrus ivory was an important article of trade in this district, and the huge pinnipeds were hunted by the natives on the sand dunes of Hagemeister island and the north side of Alaska peninsula, but now the animals have been well-nigh exterminated.

Some trading in furs and ivory is carried on in connection with the 4 large salmon canneries on the Nushagak river. The fish product of this section, varying from 100,000 to 120,000 cases per annum, far exceeds in value the catch of furs, which consists chiefly of marten, foxes, land otter, and black and brown bear.

On the Kuskokwim river also the fur trade has, since our purchase of the country, been nearly always in the hands of a single individual, a Finnish sailor of gigantic stature, who purchases his goods of the Alaska Commercial Company and sells his furs to them. The supply ships visit this district but once a year, in June, taking away at the same time the furs collected during the preceding year. A considerable part of the fur trade in this region is carried on by first purchasing oil and blubber of the poverty-stricken coast tribes who have no furs, and then exchanging these articles with the inhabitants of the upper river for marten, otter, fox, and bear skins. This method of trade necessitates the employment of a number of native agents, who, in their skin canoes, first scour the river, the lake shores, and inland water ways for oil in bladders, and then search the scattered settlements in the mountain recesses for skins. Trading is a congenial occupation with all these natives, and as a rule they make energetic and reliable agents. In another chapter the annual visit of one of these Eskimo traders to the island of Nunivak has been described, and his *modus operandi* may be considered as typical of his class. They are all illiterate and ignorant, but they manage to keep their accounts with much exactness by means of notched sticks and pictorial memoranda. The natural products of three-fourths of this region are confined to oil, seal hides and thongs, and walrus ivory. No marketable furs are found in the lowlands, and altogether this section, though thickly populated, is one of the poorest in Alaska.

Of the 7 trading stations in the Yukon district, 5 are located upon the river banks. St. Michael, the shipping point and basis of supplies, situated upon an island in Norton sound, was established in 1835 by Lieut. Michael Tebenkof, of the Russian navy, and named after his patron saint.

Though some distance to the north of the entrance to the Yukon river, St. Michael has always been the controlling center and basis of supplies for the great river of the far northwest. From here the hardy Muscovite pioneers pushed their advance slowly and laboriously with clumsy boats, in skin-covered "bidars", and trudging over the frozen snow plains with their dog teams until they met the forerunners of the Hudson Bay Company on their way down the river, which English geographers of that time pictured as emptying into the Arctic.

As long as the Russians were in possession of this region all furs secured in the Kuskokwim valley were transported over the Yukon portage to St. Michael and thence shipped to Sitka, together with those obtained by barter from the natives of the shores and islands of Bering strait. The first American traders to engage in the Yukon trade were members of the Western Union Telegraph Expedition, and foremost among these pioneers were Ketchum and Clark; the former now dead, the latter still active in the Nushagak district. Later came Mercier, a brother of the Canadian ex-minister, and a host of other French Canadians, together with three prospectors,

McQueston, Mayo (Americans), and Harper (an Englishman), who still control the trade and much of the mining industry of the upper Yukon and its tributaries from Fort Selkirk westward.

The basis of supplies for the whole district was early taken by the Alaska Commercial Company, who at first utilized a small stern-wheel steamer placed upon the river by the telegraph company, and later built other vessels for the purpose of towing loaded barges up the river. Later the firms who entered into competition with the company in other districts made a lodgment near St. Michael, and another steamer was placed upon the river.

In the year 1883 this opposition collapsed, but shortly after the bar diggings of Forty Mile creek and other parts of the upper Yukon were discovered, which caused a sudden revival of trade, chiefly in miners' supplies, and induced the traders mentioned above to acquire small steamboats of their own.

The fur trade of the Yukon has decreased in volume during the last 10 years from 75,000 skins of all kinds, including many mink, to about 20,000 per annum, but this falling off is not altogether due to exhaustion of the supply. A large number of the best hunters of the Athapascan tribes now find employment with the miners at good wages, and this relieves them of the necessity of hunting in the winter as arduously as they were obliged to formerly. On the other hand, a considerable proportion of the skins secured on the Yukon and its northern tributaries is now diverted over the various portage routes to Kotzebue sound and the Arctic coast through the hands of Eskimo traders, who finally dispose of them to the whalers and to a limited extent to their Chukche neighbors beyond the strait of Bering.

The flourishing missionary establishments of the Roman Catholic and the Episcopal churches also serve to increase traffic upon the great river during the brief season of navigation. Both the Roman Catholic and the Russian Orthodox missions now possess steamers for carrying their freight up from St. Michael and to transport their missionaries over their extensive field of labor.

The post of St. Michael, though insignificant in dimensions and of most desolate surroundings, springs into life and activity once a year. With the first breath of spring, at the end of May, the up-river people shake off their winter's lethargy and prepare for their annual meeting with their fellows from the outside world. The steamers which had been hauled up at various points on the river bank in the autumn are repaired and launched once more upon the muddy waters as soon as the ice has ceased to float down the rapid current, crashing and grinding, cake against cake, or pressing against the forest border of the channel, cutting and barking the trees, and down in the treeless wastes of the lower river undermining the soft clay banks and changing the face of the landscape.

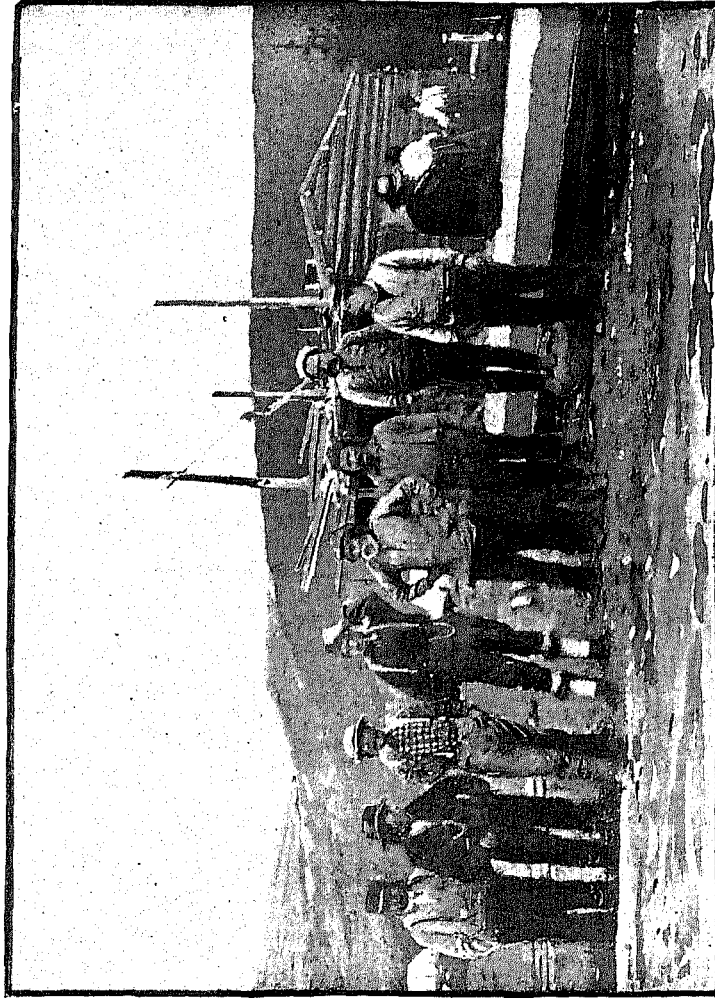
Traders, missionaries, miners, and natives crowd every craft and enjoy the hospitality freely offered them on their seaward progress at posts and missions. By the end of June all these Yukon pilgrims have reached their goal, St. Michael, and while they are waiting for the arrival of the ocean steamer accounts are regulated and engagements entered into for the transactions and enterprises of the coming season. The natives assembled here on these occasions represent all the tribes of the Yukon and many of those of the Arctic and the Bering sea coasts. Most of these bring trade with them, furs or ivory and whalebone, and though all strive to hold their wares from the white man until the steamer arrives with the new stock of goods, quite an exchange of commodities goes on in the meantime among themselves.

With the arrival of the steamer, which is sometimes delayed for weeks, causing much inconvenience to the commissary department of so large an assemblage, business activity rises at once to fever heat. Miners in ragged garments showing the wear and tear of subarctic travel, Indians of the interior in beaded suits of tanned moose skin, and Eskimo in furs, all lend a hand and labor cheerfully, getting the cargo ashore and reloading it on the river boats. The black-robed missionary relaxes from his habitual dignity, and can be seen trundling barrels and bales and trucking boxes and miscellaneous packages over the plank walks of the crowded station. The light of day lasts all through the brief Arctic summer night and the turmoil is kept up almost without cessation, until at last the steamer's whistle warns those who do not wish to spend another winter in these desolate regions that they must depart. A few lucky individuals, who have bags of gold dust in the purser's safe, seek their comfortable staterooms, while the rank and file of prospectors cheerfully accept such accommodations as steerage or deck afford, bringing out of the country no more and probably much less than they brought into it over the toilsome road from Chilkat to the Yukon diggings.

The trade of the upper Yukon is of great volume, but it is carried on under peculiar conditions. The supplies are purchased in the United States, chiefly in California, and carried thence to St. Michael. From here the river steamers, carrying the stars and stripes, ascend the river, dropping freight at intermediate stations, but the principal business is transacted at the point of junction between the Yukon river and Forty Mile creek, some 30 miles beyond our boundary. The purchasers here are miners who toil in the upper ravines of Forty Mile creek, which lie within the limits of Alaska. Prices are necessarily high, for during every winter the trader is called upon to feed numbers of unsuccessful miners and to assist them in leaving the country in the spring. Under such circumstances it is well that the lines of demarcation are temporarily ignored by both the Dominion and United States governments and no difficulties are placed in the way of carrying the necessary supplies across the border.

Eleventh Census of the United States.
Robert P. Porter, Superintendent.

Alaska.



MINERS AT FORTY MILE.

THE VALUE OF ALASKA.

Executive Document No. 36 of the House of Representatives, second session, Forty-first Congress, contains the report of a special agent of the Treasury Department on the subject of Alaska. From it are quoted the following passages, found on page 10:

COST AND VALUE OF ALASKA.

The price paid for the territory, \$7,200,000, is but a small item of its cost to the United States. Provided the public debt be paid within 25 years, annual interest on the purchase money, at the rate of 6 per cent, would in that period amount to \$23,701,792.14, which added to the principal would make the total cost of the territory \$30,901,792.14. To this sum there must be added the expense of the military and naval establishments, say \$500,000 per annum, or \$12,500,000 in 25 years, which is a much smaller estimate than can be predicted on the expenditure of the last 2 years, resulting in a grand total cost on the above basis of \$43,401,792.14.

In return for this expenditure we may hope to derive from the seal fisheries, if properly conducted, from \$75,000 to \$100,000, and from customs \$5,000 to \$10,000 per annum, a sum insufficient to support the revenue department, including the present expensive cutter service attached to the district; nor can we look for any material increase of revenue for many years, except in the event of extraordinary circumstances, such as the discovery of so large deposits of minerals as would produce an influx of population.

WHAT SHALL WE DO WITH ALASKA?

As a financial measure it might not be the worst policy to abandon the territory for the present, or until some possible change for the better shall have taken place, but for political reasons this course may not be advisable.

Notwithstanding the above calculations and predictions the management of the Seal islands alone paid into the United States treasury between \$6,000,000 and \$7,000,000 in rental and royalties within 20 years, independent of the "extraordinary circumstances" referred to by this special agent. It is safe to assert that, since the system of leasing the Pribilof islands was inaugurated, within a few weeks of the date of the report quoted here and up to the expiration of the first term of 20 years, the revenues covered into our treasury from Alaska have always exceeded the expenditure, while as a factor in the internal commerce of the United States, and especially of our Pacific coast, Alaska has assumed a position of considerable importance.

The statements appended here recording the shipments of goods and supplies to Alaska from the ports of San Francisco, California, Portland, Oregon, and Puget sound cities enable us to form some idea of the importance of this trade to growing states like California, Oregon, and Washington, but a better understanding of the advantages derived by the country at large from the purchase of Alaska can be obtained by perusing the subjoined statement of products of the territory since it came into our possession. The statement embraces only the principal articles of export, and can be relied upon as being conservative and within the actual limits of Alaska's products:

VALUE OF PRODUCTS OF ALASKA FROM 1868 TO 1890.

Furs.....	\$48,518,929
Canned salmon.....	9,008,497
Salted salmon.....	603,548
Codfish.....	1,246,650
Ivory.....	147,047
Gold and silver.....	4,631,840
Total.....	<u>64,156,511</u>
Products of the whaling industry:	
Whale oil.....	2,853,351
Whalebone.....	8,204,067
Total.....	<u>11,057,418</u>
Aggregate.....	<u>75,213,929</u>

This valuable addition to the nation's resources would more than compensate us even for an expenditure such as the special agent quoted above figured out so ingeniously by means of compound interest at 6 per cent on a cash payment.

The decline of the fur-seal industry, owing to the reckless encroachments of irresponsible and foreign sealers, has prevented the further collection of revenue in excess of expenditures since the year 1890. But even if this valuable factor in Alaska's resources be wiped out of existence, our vast northwestern territory will have amply paid for itself and be well worth preserving and fostering, not "for political reasons only", as the official prophet of 1870 suggested, but for good, sound, commercial reasons, which must impress themselves upon the minds of all unprejudiced investigators.

PRINCIPAL ARTICLES SHIPPED FROM UNITED STATES PACIFIC COAST PORTS FOR CONSUMPTION IN ALASKA.

ARTICLES.	Total.	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890
Flour (barrels).....	100,352	6,488	6,276	7,992	5,856	7,584	11,734	9,296	9,153	10,396	11,412	14,165
Sugar (barrels).....	14,236	1,305	1,061	1,266	1,735	1,412	952	953	1,216	1,878	1,060	1,332
Butter (kegs).....	6,213	253	357	485	449	405	403	460	861	714	812	1,015
Coffee (boxes).....	4,581	74	99	680	1,725	204	543	74	148	290	328	410
Tea (chests).....	13,172	1,020	1,268	1,166	2,908	890	1,222	1,128	1,065	1,308	532	665
Potatoes (bags).....	18,284	1,232	560	450	568	1,421	605	613	864	1,608	4,566	5,707
Onions (sacks).....	1,334	48	105	80	40	77	50	88	93	94	285	365
Other vegetables (sacks).....	14,601	512	550	1,264	741	1,556	1,274	929	1,578	1,844	1,846	2,507
Fruits (cases).....	21,617	903	1,078	1,442	1,286	1,307	1,786	1,518	2,080	3,304	2,726	3,407
Salt (sacks).....	149,630	7,656	9,342	7,734	9,297	20,494	18,206	789	12,005	20,458	19,844	23,805
Salt, other than sacks (pounds).....	20,464,421	333,400	53,940	666,800	13,613	1,413,400	3,256,033	1,221,773	2,182,300	3,970,702	3,208,000	4,085,000
Cigars and tobacco (packages).....	6,088	650	416	634	680	625	517	517	492	576	795	700
Pork (barrels).....	3,285	85	129	181	172	273	260	226	262	498	533	666
Beef (barrels).....	6,581	222	534	1,072	93	205	569	269	424	534	1,182	1,477
Miscellaneous meats (barrels).....	4,350	370	561	600	516	365	188	433	454	444	213	266
Soap (boxes).....	38,518	3,312	3,374	3,494	3,458	3,202	3,404	3,677	3,257	3,564	3,456	4,320
Miscellaneous canned goods (cases).....	20,717	1,288	1,708	2,017	2,506	3,037	984	2,462	3,020	3,670	3,600	4,375
Canned vegetables (cases).....	1,385	24	4	32	165	338	152	26	80	60	224	280
Hardware (cases).....	2,322	682	650	50	113	53	98	113	42	184	150	187
Hardware (packages).....	20,428	352	574	1,125	1,085	532	508	354	954	1,836	5,826	7,282
Boots and shoes (cases).....	4,786	392	308	570	214	284	305	353	452	577	525	656
Dry goods (cases).....	5,880	786	618	743	308	333	444	360	378	493	629	786
Clothing (cases).....	2,381	88	202	322	217	170	104	442	225	224	172	215
Coal (pounds).....	69,306,050	190,920	229,200	2,107,200	3,265,866	608,800	2,721,666	2,668,000	2,963,060	4,973,333	22,030,933	27,538,666
Lumber (feet).....	10,056,822	800,893	629,000	496,021	590,597	384,980	407,058	634,466	945,078	1,607,792	5,678,368	6,972,960
Canned meats (cases).....	2,137											2,137

VALUE OF MERCHANDISE SHIPPED FROM PACIFIC COAST PORTS TO ALASKA FROM 1868 TO 1890.

1868.....	\$253,250	1881.....	\$547,976
1869.....	251,375	1882.....	584,790
1870.....	262,432	1883.....	668,508
1871.....	215,810	1884.....	615,345
1872.....	426,770	1885.....	853,640
1873.....	799,602	1886.....	874,608
1874.....	704,538	1887.....	1,333,965
1875.....	633,192	1888.....	1,486,824
1876.....	385,262	1889.....	1,686,307
1877.....	325,878	1890.....	1,635,494
1878.....	268,100		
1879.....	317,194	Total.....	15,594,086
1880.....	463,226		

The merchandise shipped in 1890 was distributed to landings as follows:

Sitka.....	\$129,800
Juneau.....	311,493
Douglas.....	224,945
Wrangell.....	60,090
Metlakatla.....	24,356
	750,684
Western Alaska.....	884,810
Total.....	1,635,494

FOREIGN TRADE.

YEARS.	Imports.	Domestic exports.
Total	\$165,644	\$212,741
1881.....	10,966	60,183
1882.....	8,484	38,520
1883.....	14,945	28,393
1884.....	4,420	8,438
1885.....	8,944	24,468
1886.....	14,252	8,022
1887.....	18,036	7,336
1888.....	28,211	23,499
1889.....	32,809	200
1890.....	24,577	4,682

SHIPMENTS FROM PORTLAND, OREGON, TO ALASKA.

Provisions and groceries	\$174,798.21
Dry goods and clothing	192,059.00
Hardware, rubber, paint, and crockery	44,653.34
Furniture	1,673.56
Drugs	2,333.00
Sundries.....	15,858.68
Total.....	431,375.79

SHIPMENTS OF ALASKAN PRODUCTS BY THE ALASKA COMMERCIAL COMPANY FOR THE YEARS 1880 TO 1889.

YEARS.	Assorted furs. (Packages.)	Seal skins. (Number.)	Walrus tusks. (Number.)	Salmon. (Barrels.)	Blubber oil. (Barrels.)	Whalebone. (Packages.)
Total	6,131	994,943	4,492	7,445	179	33
1880.....	670	100,011	1,151	1,014		
1881.....	578	100,706	795	1,051		
1882.....	454	101,002	857	507	106	
1883.....	724	76,651	925	2,288½		4
1884.....	722	102,517	321	20½		22
1885.....	657	101,484		859		1
1886.....	739	103,050	140	927		3
1887.....	528	104,715	223	106		2
1888.....	444	101,760	60	503		
1889.....	615	103,017	20	109	13	1

SHIPMENTS OF ALASKAN PRODUCTS FROM PRINCE OF WALES ISLAND
(R. A. WILSON), 1883 TO 1886.

YEARS.	FUR.		SALMON.		LUMBER.
	Packages.	Skins.	Cases.	Barrels.	Feet.
Total	116	28	28,695	680	1,670,000
1883.....	48	26	7,734	482	400,000
1884.....	26		5,193	196	870,000
1885.....	10		7,922		400,000
1886.....	32	2	7,846	2	

COAL SHIPMENTS FROM NANAIMO, BRITISH COLUMBIA, TO ALASKA IN 1890.

DATES.	Vessel.	Total.	Ship's use.	Cargo.	DATES.	Vessel.	Total.	Ship's use.	Cargo.
		Tons.	Tons.	Tons.			Tons.	Tons.	Tons.
Total		11, 178	4, 140	7, 038	June 24	Bertha	698		698
January 10	City of Topeka	504	200	304	July 10	City of Topeka	257		257
January 15	George W. Elder	420	300	120	July 12	Chilkat	45	45	
February 13	Santa Cruz	203		203	July 16	Arago	857		857
February 24	George W. Elder	500	300	200	August 2	Mischief	64		64
March 12	City of Topeka	450	200	250	August 2	George W. Elder	107		107
March 26	George W. Elder	353	300	53	August 9	City of Topeka	355	200	155
April 10	City of Topeka	302	200	102	August 23	George W. Elder	230		230
April 22	Cosmopolis	75	75		September 8	City of Topeka	465	200	265
April 25	George W. Elder	701	300	401	September 22	Mexico	352	352	
April 28	Polar Bear	25	25		September 23	do	400		400
May 10	City of Topeka	353	200	153	October 7	City of Topeka	501	250	251
May 25	George W. Elder	415	300	115	October 25	Mexico	187	187	
June 9	City of Topeka	325	200	125	October 26	do	276		276
June 17	Jeanie	1, 184		1, 184	November 8	City of Topeka	306	306	
June 24	George W. Elder	198		198	December 7	do	70		70

WATER WAYS AND TRANSPORTATION.

The water ways of Alaska form one of the most important features in a country of so vast an extent, inaccessible in nearly all parts of it except by water. In discussing this subject we begin with the southeastern district of Alaska, between the southern boundary and the Mount St. Elias alpine region. Here we find a system of deep navigable salt-water channels, with a depth varying from 50 to 250 fathoms, sheltered from the winds and sea alike by a network of islands. The principal channels coming under this head are Dixon sound, the water of which washes the southern extremity of this section of Alaska; Clarence strait, which separates the Prince of Wales archipelago from the islands of Revilla Gigedo, Kupreanof, Zarembo, and Etolin; Christian sound, between Baranof island and the Kuiu archipelago; Prince Frederick sound, extending westward from Cape Fanshaw, between Admiralty island and the islands of Baranof and Chichagof; Stevens passage, between the mainland and Admiralty island; Lynn channel, which penetrates the mainland for a distance of 100 miles to the northward of Admiralty island; Peril strait, separating Baranof and Chichagof islands, and Cross sound, between Chichagof island and the mainland to the north. In addition to this there are hundreds of minor channels, all alike navigable for any class of steamships. During the Russian occupancy of Alaska small steamers were plying the waters, trading with the natives, and at the same time serving to intimidate the latter and keep them in subjection. During the last years of Russian rule 2 steamers of large dimensions, the Constantine and the Alexander, could frequently be seen puffing up and down its sheltered channels on their way to and from Californian ports. Since our acquisition of the former Russian possessions steam communication between Puget sound, Portland, or San Francisco and this section of Alaska has been kept up almost without interruption through the sheltered channels described above and the equally intricate archipelago lining the intervening coast of British Columbia.

The only river of any magnitude emptying into the waters of this section of Alaska is the Stikine river, on the upper course of which an extensive mining camp has been located, which, however, has of late years fallen almost exclusively into the hands of Chinese miners. This river is navigable for a distance of something over 200 miles for stern-wheel steamers, a line of which had been run for a period of 12 or 15 years, passing from Victoria northward and through our possessions to the mouth of the Stikine, touching in transit at Wrangell customhouse, where there is a bonded warehouse. For 2 seasons, 10 years ago, an American steamer was employed in this trade in an unsuccessful attempt at opposition.

Almost from the earliest time of our occupancy of Alaska the mail service has been in existence between some point on Puget sound and Sitka and intervening points. The first mail contract by this line was awarded to the famous expressman, Benjamin Holliday, of Oregon, who, together with his San Francisco partner, P. B. Cornwall, put on the old steamer California, and for many years this small steamer furnished the only opportunity for transporting freight or passengers to and from southeastern Alaska. Finally the mail contract, and with it the freight and passenger business of this section was transferred to the firm of Goodall, Nelson & Perkins, now the Pacific Coast Steamship Company, who, as the country began to fill up with prospecting miners and traders, gradually increased their facilities, until during the last few years a bimonthly and sometimes a weekly service was inaugurated. In addition to this regular line 3 or 4 steamers belonging to private parties ply occasionally to and from southeastern Alaska, and a few sailing craft carry up mining or canning supplies, generally returning with cargoes of fish.

The business of organizing excursions to southeastern Alaska was inaugurated by the Pacific Coast Steamship Company, and for this purpose they greatly increased the number of steamers during the summer months. The

magnificent scenery, presenting to the tourist alternate views of high mountains, glaciers, and winding channels, proves very attractive to the thousands of visitors annually crowding the steamers of this line.

The contract under which the Pacific Coast Steamship Company carries the United States mail provides for a monthly service. During the winter this company runs 2 vessels, carrying freight and passengers from San Francisco, Portland, and Puget sound points to southeastern Alaska. In summer this service is increased to weekly trips, owing to the rush of excursionists going to Alaska from May to September, which is called the excursion season.

The steamers also carry such passengers and freight as they can get between ports at which they call in southeastern Alaska, the principal ones being Loring, Killisnoo, Wrangell, Juneau, and Sitka. This is virtually the only regular line of steamers plying between Alaska and other ports, and it is confined to the southeastern district only. The only freight rates which are in general use between this section of Alaska and the ports of San Francisco, California; Portland, Oregon; Port Townsend, Seattle, and Tacoma, Washington, are those used by the Pacific Coast Steamship Company, and are as follows: From San Francisco to Juneau, Sitka, Douglas island, Killisnoo, Chilkat, and Pyramid harbor: flour, \$12 per ton; groceries and general merchandise or canned goods, \$14 per ton; coal, \$12 per ton; lumber, \$14 per ton; dry goods, \$14 per ton.

Rates from Portland to these points are \$2 less than from San Francisco; rates from Port Townsend are \$4 less than from San Francisco, and from Seattle and Tacoma are \$1 less than from Port Townsend. Passenger rates are charged upon the basis of \$70 for a single cabin passage from San Francisco to Juneau or Sitka, or \$50 from Tacoma, with a slight increase in local rates between intermediate points. A reduction of nearly 10 per cent is made in favor of excursionists with return tickets. The tonnage engaged in this traffic is owned in California. In addition to this regular line, small schooners and sloops are plying between the settlements of the Alexander archipelago, and occasionally to Yakutat bay. The small cargoes which these vessels carry are taken at rates varying from \$6 to \$10 per ton.

The next large water way in a western direction is the Copper river, a stream of considerable depth and width, but which will not permit of anything beyond canoe or boat navigation, owing to the peculiar formation of its lower course, which is beset with shoals, glaciers, and landslides, choking up the channel.

The waters of Prince William sound, though nearly always smooth and well protected by surrounding islands, and open throughout the year, are only navigated by a few hunting schooners of very small tonnage and 2 or 3 small steamers belonging to the salmon-canning establishments in the eastern part of the south.

The waters of Cook inlet are closed to navigation on account of ice from December to the end of April. 3 rivers empty into this vast estuary, navigable only as far as tidewater extends, the Kassilof, the Kenai or Kakno, and the Kinik. On the 2 former streams 3 salmon-canning establishments have been located, each of them having steamers and small sailing craft, which ply both rivers and inlet, carrying fish and supplies. During the summer season quite a fleet of trading and hunting schooners frequents the coast of Cook inlet, many of them conveying large numbers of native hunters in their skin canoes. In the large group of islands comprising Kadiak, Afognak, and Shuyak not a single navigable river exists, though this is the very center of the most prolific salmon-fishing district in Alaska. The harbor of Kadiak, provided with a customhouse, is the distributing point for the fur trade and shipping of all this region. As the commerce between Alaska and other ports of the Pacific coast is considered coastwise, entries and clearances are the exception rather than the rule, and consequently no definite statistics of its magnitude can be obtained. We know, however, that the tonnage of the San Francisco salmon fleet alone foots up over 20,000 tons.

Access to all central and western Alaska is had only by private lines, the principal one being that operated by the Alaska Commercial Company in connection with their numerous trading and fishing stations. They carry passengers on their steamers and sailing vessels to nearly all points in western Alaska as far as St. Michael. As it is not a regular line, there are no regular charges for passengers or freight, but the latter vary from \$6 to \$10 and \$12 per ton. Passenger rates on the steamers are apparently charged on the basis of \$100 per single cabin passenger from San Francisco to Unalaska or Unga, \$85 between Kadiak and San Francisco, and \$150 from San Francisco to St. Michael.

In the Kadiak district also there is a large number of small craft, trading and hunting schooners, varying in tonnage from 5 to 50 tons, nearly all of them carrying any small cargoes of freight which may offer at uncertain and arbitrary rates, and the same rule applies to passenger rates on such craft. Between the Kadiak group and the Shumagin islands there is a stretch of 250 miles of open sea, with small peaks of the main Alaskan range looming up all along the northwest, which is, however, freely traversed during the summer season by the above-mentioned small craft. The waters around the Shumagin group of islands and the deep indentations of the Alaska peninsula opposite are crowded with the sails of traders, sea-otter hunters, and cod fishers, this being the central shipping and distributing point of the cod-fishing industry of Alaska, and freights between the points and San Francisco are carried on fishing schooners at the average rate of \$10 per ton, and a few passengers are accommodated at the rate of \$40 or \$50 between the Shumagin islands and San Francisco. The 3 canneries on Chignik bay to the northward and Thin point to the southward have each 1 or 2 steamers and several sailing vessels employed

in collecting and shipping fish. Here, as well as at Kadiak and all along the Aleutian islands, the water remains open all the year round; but the winter season is distinguished by a succession of the severest gales. Throughout the summer the steamers and sailing vessels of the Alaska Commercial Company and other traders, as well as sealing hunters, can be seen around this long chain of islands, which, like most of the Alaskan archipelagoes, abounds in sheltered harbors.

In the easternmost indentation of the coast of Bering sea is Bristol bay, one branch of which is formed by the mouth of the Nushagak river, a stream which is believed to be navigable by light-draft stern-wheel steamers for a distance of 250 miles, but no attempt in this direction has yet been made. At the mouth of the Nushagak 4 large canning establishments have been located, all of them employing both steam and sailing vessels in collecting and carrying the fish. As this estuary is closed by ice during the winter, all the shipping returns to San Francisco in the autumn. The mouth of the second largest river in Alaska, the Kuskokwim, is so thoroughly beset with shoals and shifting sands that navigation will always remain dangerous in the extreme. The supply vessels of the Alaska Commercial Company ascend the river to a point about 100 miles from its mouth, where the opposite shore is visible only in the clearest weather.

From the mouth of the Kuskokwim around Cape Rumiantzof to the numerous mouths of the Yukon river the coast is exceedingly dangerous and almost unsurveyed. Shoals make off from the coast to such an extent that an approaching vessel can find soundings of 3 fathoms before the low land is sighted.

We now come to the great interior artery of Alaska, the Yukon river, which, rising in foreign territory, traverses the width of the continental portion of Alaska between the 141st and 164th degrees of longitude, describing in its passage a line of over 1,200 miles in length. The Yukon is now known to be navigable for stern-wheel steamers of 250 tons for a distance of 1,600 miles, to Fort Selkirk, at the mouth of Pelly river, in the dominion of Canada. Only at 3 points rapids exist in the Yukon, but even there the current is easily stemmed by the powerful boats now used on the river. The steamer Arctic, belonging to the Alaska Commercial Company, is said to average from 7 to 8 miles an hour, going up stream, between Norton sound and the head of navigation.

The first attempt to use steam craft on the waters of the Yukon was made under the auspices of the Western Union Telegraph Company at the time of their vast and costly experiment in the years 1866-1867. The telegraph company's small steamer, which was carried up to the Yukon on the deck of a bark, continued to run for many years after the transfer of the country to the United States, having been purchased by traders. Another steamer, but little larger, was launched on the river about the year 1878, and a third in 1880, none of these exceeding 30 tons in capacity. Subsequently other small steamers were launched upon the river by prospecting and exploring parties, which were afterwards purchased by the resident traders. One small boat of this kind, which had been used by Lieutenant Stoney, of the United States navy, in his exploration of the Kowak or Putnam river, has since been purchased by the missionary in charge of the Russian mission of Ikogmiut, to be used in his extensive journeys over the waters of the Yukon and its tributaries.

It was not until the discovery of the bar and surface diggings on the Upper Yukon that regular freight and passenger traffic began to develop on the river, a traffic which has remained in the hands of the Alaska Commercial Company to the present day. The freight carried annually between the port of St. Michael and the trading and mining camps all along the river as far as Forts Independence and Selkirk foots up to between 2,000 and 3,000 tons, inclusive of that carried up by the Alaska Commercial Company to their stations. The freight rate charged to all others is \$50 per ton, and the passenger fare \$150 between terminal points, with intermediate rates in proportion.

Navigation on the Yukon and most of its large tributaries is open during the months of June, July, and August, and half of September. Occasionally a severe winter causes the ice to keep the mouth of the river closed until the 1st of July. The most serious obstacle in the way of further development of navigation of this mighty river is the uncertainty as to the location of a deep channel between its mouth and the sea. That there must be such a channel is evidenced by the schools of white whale and grampus found far up the river, but thus far no one has succeeded in finding a channel between the deltoid mouth of this river and the waters of Bering sea through which seagoing vessels can pass. All the steamers mentioned above are of a draft between 2 and 4 feet only. The possibilities of the development of navigation on this, one of the foremost rivers of the country, are almost incalculable should this one obstacle be removed. Perhaps some of our venturesome salmon fishermen, in search of the piscatorial wealth of the Yukon, will solve the problem in course of time.

The 4 or 5 large rivers which during the last few years have been discovered and explored in that part of Alaska lying beyond Bering sea and emptying into the Arctic ocean are not reported to be susceptible of anything beyond boat navigation, but they form a system of very extensive internal water ways of great importance for the internal intercourse of the native tribes.

The freight movement on the Yukon river is reported for the last 3 years as follows, approximately for each year: From St. Michael to the head of navigation, 200 tons; to Nuklukayet, 30 tons; to the various missions, 200 tons; a total of 430 tons, at the rate of \$50 per ton. Navigation is open during July, August, and September.

The accompanying table embraces the shipping employed in fishing and trade of Alaska in the year 1890, showing an aggregate volume of nearly 35,000 tons. A large proportion of these steamers and sailing vessels made repeated trips during the season, the whole list representing a high degree of commercial activity far beyond that to be naturally expected of a region so remote and comparatively unknown as Alaska.

TONNAGE OF SHIPPING EMPLOYED IN ALASKAN TRADE IN 1890.

STEAMERS.

	TONS.		TONS.		TONS.
Geo. W. Elder.....	1,225	Polar Bear.....	29	Afognak.....	37
City of Topeka.....	747	Thistle.....	65	Pacific.....	37
Santa Cruz.....	360	Arago.....	620	Signal.....	392
Karluk.....	220	Puritan.....	14	Hattie Gage.....	56
St. Paul.....	607	Chinook.....	10	Yaguina.....	253
Cosmopolis.....	267	Kate and Ann.....	30	Elsie.....	37
Bertha.....	450	Queen.....	1,672	Haytian Republic.....	779
Gertie Story.....	50	Arctic.....	21	Olga.....	7
Dora.....	136	Alent.....	19	Novelty.....	75
Ella Rohlf's.....	36	Mexico.....	1,340	Jennie.....	52
Francis Cutting.....	60	Chilkat.....	56	Jessie Freeman.....	510
Jeanie.....	863	R. P. Elmore.....	42		
Alaska.....	23	Salmo.....	35	Total.....	11,232

SAILING VESSELS.

SUMMARY.

Ships.....	3,668
Barks.....	13,311
Barkentines.....	562
Brigs.....	189
Schooners.....	6,035
Total.....	23,765

SHIPS.

Merom.....	1,158
Gatherer.....	1,436
Oneida.....	1,074
Total.....	3,668

BARKS.

Portland.....	469
Highland Light.....	1,265
J. D. Peters.....	1,030
Coryphene.....	771
Nicholas Thayer.....	555
Annie Johnson.....	947
J. A. Borland.....	670
W. W. Case.....	555
Newsboy.....	559
Electra.....	939
C. C. Funk.....	512
Henry Morse.....	1,313
Wanderer.....	303
Hunter.....	355
F. A. Barstow.....	301
W. H. Myers.....	269

BARKS—continued.

Reindeer.....	357
Eliza.....	269
Bounding Billow.....	239
S. H. Franks.....	310
Hope.....	758
Corea.....	565
Total.....	13,311

BARKENTINES.

Tam O'Shanta.....	562
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BRIGS.

Percy Edwards.....	189
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SCHOONERS.

Czar.....	137
C. H. Wright.....	82
Dashing Wave.....	141
Alice Kimball.....	102
Antelope.....	118
Mayflower.....	86
Beulah.....	339
Kodiak.....	97
Matthew Turner.....	71
Pearl.....	83
H. C. Wright.....	276
Ametlyst.....	70
Premier.....	296
Robert Searles.....	570

SCHOONERS—continued.

Queen.....	264
Frances Alice.....	125
Louis.....	820
H. N. Kimball.....	183
Sadie F. Caller.....	393
Undaunted.....	65
Glen.....	121
Bessie Rutter.....	30
C. T. Hill.....	133
Hera.....	369
St. Paul.....	46
Dare.....	246
Viking.....	140
Olga.....	44
Seventy-six.....	37
Ed. E. Webster.....	138
F. F. Feeney.....	11
Norwest.....	8
Spencer F. Baird.....	7
Three Brothers.....	19
Olga.....	21
Flying Dutchman.....	7
James H. Lewis.....	37
Lydia.....	31
Trapper.....	19
San Diego.....	38
Unga.....	20
C. N. Smart.....	8
Alexandria.....	8
Nellie Martin.....	16
H. Blume.....	66
Mary H. Thomas.....	97
Total.....	6,035

CHAPTER XVII.

HISTORICAL REVIEW OF THE DECADE FROM 1880 TO 1890.

The interval between the Tenth and Eleventh Censuses was one of the most important periods in the history of our detached territory in the far northwest. In the course of this period Alaska emerged from a mere customs district into a preliminary phase of local organization.

The same period has witnessed the marvelous development of Alaska's mines and fisheries. In 1880 both these industries were insignificant in volume and completely overshadowed by the fur trade, then practically controlled by a single firm; but by 1890 the mines and salmon canneries had shipped products to the value of \$15,000,000, or more than twice the purchase price of Alaska.

The struggle on the part of the residents of southeastern Alaska for recognition by the United States government grew in earnestness with the discovery of promising mines in the autumn of 1880. Even previous to these discoveries the collector of customs, having been called to Washington, was commissioned to advocate the claims of Alaska to some form of civil government and the discontinuance of the altogether inadequate control of the naval and customs service through their representative at Sitka. These first efforts met with no success, but in July, 1881, encouraged by the constant influx of prospectors, miners, and traders, a few of the most prominent residents called a convention at Juneau (then known as Harrisburg) for the purpose of choosing a delegate to lay the demands of the Alaskans before Congress. Among the reports of House committees of the Forty-seventh Congress (H. R. No. 560, first session) is a concise statement of the origin and results of this first political convention held in Alaska, as follows:

[Reports of committees, Forty-seventh Congress, first session, H. R. No. 560.]

(1) Call for convention.—The original call was by notice inviting the citizens of Harris mining district to meet in Horsford's building, Harrisburg, at 9.30 a. m., July 4, 1881, "for the purpose of taking some action toward the procurement of recognition and representation of this territory by the United States government in the next Congress of the United States".

The notice was signed by H. M. Steele and 29 other residents.

The meeting was largely attended, and was organized with W. M. Bennett, chairman, and T. A. Wilson, secretary.

Resolutions were adopted inviting the other settlements to assemble in primary conventions and select delegates to a general convention to be held at Harrisburg on the arrival of the mail steamer in August. The number of these delegates was apportioned by reference to and report from a committee. The 5 delegates apportioned to Harrisburg were elected by ballot, and provision was made for notice to the other settlements.

(2) Responses.—The towns of Wrangell and Sitka held meetings on the 30th of July and 4th of August, respectively, passed resolutions heartily indorsing the call, and elected delegates. Delegates were also chosen by the settlements at Klawak and Killisnoo.

(3) The convention.—The convention assembled August 16 in Harrisburg. A temporary organization was effected and a committee on credentials appointed, which reported 15 delegates present out of the 18 provided for in the call. Permanent organization was then made and the memorial adopted. An election was also ordered "for a person to represent the territory of Alaska, or that portion of it for which we ask a government, in the Forty-seventh Congress of the United States, and to present the memorial adopted".

CERTIFICATE OF ELECTION.

The board of canvassers appointed met September 13, 1881, and the returns being all in from the voting places provided, they certify that there were 294 votes cast at the same, of which 236 were for Mottrom D. Ball, 57 for M. P. Berry, and 1 for Jack Welch. They further certify that a poll was opened at Chicana (a retired settlement), "although no provision for the same was made by the said convention," at which 10 votes were cast for the said Mottrom D. Ball, and they declare said Mottrom D. Ball duly elected delegate. Their certificate is certified as acknowledged and affirmed September 13, 1881, before W. J. Burwell, deputy collector of customs, under his hand and the customs seal. (There are no officials in the territory authorized to administer oaths except the customs officers.)

The memorial of the citizens of Alaska, drawn up by this convention, and asking for the admission of Mottrom D. Ball to the floor of the House as a delegate, was submitted by unanimous consent by Mr. Horace F. Page, of California, on the 21st of December, 1881, and referred to the Committee on Elections.

President Arthur, in his annual message, had recommended the establishment of civil government in Alaska, and several bills were introduced with that object in view, but action on the various measures was delayed and hampered by the efforts on the part of Mr. Ball's friends to have him recognized as delegate previous to any organization of the territory. Under such circumstances nothing was accomplished in behalf of Alaska beyond calling for voluminous reports from naval and treasury officials and employés of the United States Signal Service, many of which were ordered printed.

Action on the admission of Mr. Ball finally went over to the second session of that Congress, and terminated in a refusal of the House to seat him as delegate and the payment of his expenses during the contest.

In the month of October, 1882, a misunderstanding between the Hutznuh tribe and a whaling firm located at Killisnoo resulted in an appeal of the whites for protection and the subsequent shelling of the Hutznuh village by the revenue cutter Corwin, Captain M. A. Healy, and a naval detachment under Captain Merriman, of the United States steamer Adams. This affair attracted much attention, and gave a stimulus to the movement in favor of establishing civil government in Alaska. Much precious time was consumed, however, in demanding and discussing reports on the incident from the heads of the Navy and Treasury departments, and nothing was done during the second session of the Forty-seventh Congress beyond the introduction of various bills providing for a territorial organization.

On the 18th of December, 1883, a bill providing for the organization of Alaska as a civil district was introduced in the Senate by Mr. Benjamin Harrison, of Indiana. A number of other measures were before both Houses of Congress at the time, but the whole movement in favor of Alaska was speedily reduced to a thorough discussion of the Harrison bill, which provided for a governor; a district court, with a judge, a clerk, and a district attorney; a United States marshal; 4 United States commissioners, and 4 deputy marshals, the governor and court to reside at Sitka and the commissioners and deputies at Sitka, Juneau, and Unalaska. An effort made by Senator Miller, of California, to provide for a commissioner and a deputy marshal at Kadiak, was also defeated. A clause of this act which provides for schools at the expense of the general government, not only for the Indians but for the whites, met with much opposition. Among the chief objectors to this clause were Messrs. John J. Ingalls, of Kansas; Charles W. Jones, of Florida, and Preston B. Plumb, of Kansas. The latter, during a debate on January 21, 1884, expressed himself as follows:

If this section is literally carried out, there will be a great many schools in a great many places in Alaska where schools would not be considered necessary in any other portion of the habitable globe.

And again, on the following day:

Mr. President, we have not done that with any other part of our people. We are opening a door which it will take a great many hundred thousand dollars to close.

After some discussion on the subject of regulating the liquor traffic, the bill passed the Senate on the 25th of January, 1884. The House of Representatives took up the measure on February 6, and, substituting it for the numerous other bills on the same subject then before it, passed it, after extended debate, on the 13th of May. The approval of President Arthur on the 16th of the same month gave to Alaska its political status as a civil district of the United States, after the failure of 25 other bills introduced in Congress previous to 1883.

The first governor appointed under the organic act was John H. Kinkade, of Nevada, who was one of the pioneer traders of Sitka and had subsequently served a term as governor of the state of Nevada. The first district judge was Ward McAllister, a young lawyer of California. The administration which superseded the naval authority previously existing found itself hampered by lack of all means for exercising its functions. An example of the embarrassing state of affairs then existing is shown in a correspondence between the judge and the commander of the naval force at Sitka, in December, 1884, which was printed in House of Representatives Executive Document No. 227, second session, Forty-eighth Congress:

SITKA, ALASKA, December 2, 1884.

DEAR SIR: I have committed one Michael Travers to jail, in default of \$1,000 bail, for trial at the May term of the district court, he being charged with the offense of selling malt liquors to Indians. Under the circumstances, and considering the peculiar condition of affairs now existing in this territory, the want of funds to provide for the maintenance of prisoners, and, in fact, the neglect of the government to provide for the civil government in any way, I am obliged to request you to allow the said Travers to be confined in your prison, and to ask you also to feed him while so confined, as you have so kindly done in other urgent cases.

Should you see proper to comply with this request, I will be very much obliged, as otherwise I will be under the necessity of discharging the prisoner.

I have the honor to remain, your obedient servant,

Captain H. E. NICHOLS,
Commanding United States Man-of-war Pinta.

WARD MCALLISTER,
United States District Judge for Alaska.

UNITED STATES STEAMER PINTA (FOURTH RATE),
SITKA, ALASKA, December 3, 1884.

SIR: I have to acknowledge the receipt of your communication of the 2d instant regarding the issue by the navy of a ration to one Michael Travers, who in default of bail has been bound over for trial at May, 1885, term of the district court, and requesting from me the issue of the ration for his benefit until that time.

In reply, I would say that, while I consider myself under every obligation to assist the civil authorities of Alaska in the execution of the laws for the district government, yet I can not under any circumstances place myself in the position assumed by you.

It is possible, and indeed probable, that you do not understand that I am personally responsible through my purse for every order I give to the paymaster for the issue of rations, clothing, or money in any irregular manner. This action which you desire is most irregular. You may quote as a precedent the case of the Indian now in prison awaiting trial for murder. To me it is no precedent, for up to the time of my arrival here there was no government beyond that exercised by the common sense of the senior naval officer.

At the urgent personal request of Governor Kinkead I consented to allow the Indian's ration to go on until your arrival, when it was supposed in the natural and proper state of affairs his trial would take place, this being, as I understand, a regular session of the district court, or if even a special session the facts are the same.

Referring to your letter, I quote, "and in fact the neglect of the government to provide for the civil government in any way", I would respectfully suggest that it is rather late in the day to bring that up; you should have found that out immediately upon your arrival here, and it is possible that some means might have been taken to tide over the difficulty.

You inform me that, unless I am willing to feed the said Michael Travers, you will be under the necessity of discharging him. I must distinctly state that I decline in every particular to be the pivot on which the success of this new civil government of Alaska shall swing. The fact of the commitment of Travers depends upon the law and the evidence, and not upon the fact whether I will feed him or not. The officer of the civil government who has charge of the prisoner is responsible for that part of it.

In conclusion, I would say to you as district judge that if you do not feel that you can execute the laws of this new district, because an all-wise government has not seen fit to provide you with such means as you deem necessary, that you allow the business to revert to its former very peaceful state, or else, in consultation with such government officers as are officially here to aid and assist in carrying out the laws, make such arrangements as will afford temporary relief.

Until some further and distinct understanding is arrived at I must, after December 5, proximo, decline to issue rations to the Indian prisoner, and in no case can I issue a ration to Michael Travers.

I am, sir, very respectfully,

H. E. NICHOLS,
Lientenant Commander, United States Navy,
Commanding United States Steamer Pinta, and Senior Officer Present.

Hon. WARD MCALLISTER,
United States District Judge, Sitka, Alaska.

Toward the end of the Forty-eighth Congress numerous communications were received from the departments of the Interior, Treasury, and Justice pointing out the urgent necessity of providing means for carrying on the primitive form of government established in Alaska by the "organic act".

The governor, J. H. Kinkead, in a special report, urged that all the old Russian buildings transferred by the treaty to the United States government be repaired sufficiently to permit of their use as quarters, offices, court rooms, and jails. The estimate of the cost of such repairs and of the most necessary contingent expenses for carrying on the government footed up nearly \$50,000. No definite action was had on the subject at that time. The session was about to close without any legislation in behalf of Alaska beyond permission to print various reports of explorers and of officers of the navy, the revenue marine, and the signal service, when on the last day, the 3d of March, 1885, Senator Manderson, of Nebraska, introduced a resolution providing for a special committee of the Senate to visit Alaska during the recess to investigate the working and the needs of the new government and to frame an act containing such additional legislation as should be found necessary. The resolution was passed, and the committee, with Mr. Manderson as chairman, visited Sitka and southeastern Alaska during the summer of 1885.

During this recess new officers for the district of Alaska were appointed by President Cleveland, and they were confirmed during the first days of the Forty-ninth Congress. A. P. Swineford, of Michigan, was made governor; Lafayette Dawson, of Oregon, district judge; M. D. Ball, of Virginia, district attorney, and B. Atkins, United States marshal.

In the course of the same summer an incident occurred which directed public attention to the comparative helplessness of the civil authorities in the newly organized district. The laborers employed in the various mining enterprises about Juneau and Douglas island, affected by the anti-Chinese agitation then fomented on the Pacific coast, objected to the employment of Chinese in the works of the Treadwell Mining Company. Meetings were called and incendiary speeches made, which finally resulted in the expulsion by force of all the Chinamen from Douglas island. They were placed on board of 2 small sailing vessels, which the mob had seized, and started upon their way to Wrangell and Puget sound.

The company's manager appealed to the governor, who in his turn, finding it impossible to secure a sufficient posse of deputy marshals, requested the commander of the naval force at Sitka to assist in suppressing disorder and in protecting the mining company and its employes against violence.

The correspondence on this subject, as published in the House executive documents of the Forty-ninth Congress, indicates the continued want of co-operation between the representatives of civil and military authority, which had hampered the administration of Alaska from the beginning.

The most serious difficulties in the enforcement of law grew out of the sale of intoxicating liquors in the territory. The laws are very strict regarding the importation and sale of ardent spirits in Alaska. The labyrinthine network of water courses, the enormous spaces to be guarded, the appetites of the natives, the greed of avaricious white men, and the remoteness of the responsible administration, favor or stimulate a traffic in alcoholic liquors which has added serious tragedies to the recent history of southeastern Alaska and threatens the extermination of the natives.

During the ownership of Alaska by the United States it was not practicable for individuals to obtain title to land until the passage of an act entitled "An act to repeal timber culture laws, and for other purposes", approved March 3, 1891. Certain sections of this act applicable to Alaska are as follows:

SEC. 12. That any citizen of the United States 21 years of age, and any association of such citizens, and any corporation incorporated under the laws of the United States, or of any state or territory of the United States now authorized by law to hold lands in the territories now or hereafter in possession of and occupying public lands in Alaska for the purpose of trade or manufactures, may purchase not exceeding 160 acres, to be taken as near as practicable in square form, of such land at \$2.50 per acre: Provided, That in case more than 1 person, association, or corporation shall claim the same tract of land, the person, association, or corporation having the prior claim by reason of possession and continued occupation shall be entitled to purchase the same; but the entry of no person, association, or corporation shall include improvements made by or in possession of another prior to the passage of this act.

SEC. 13. That it shall be the duty of any person, association, or corporation entitled to purchase land under this act to make an application to the United States marshal, ex officio surveyor general of Alaska, for an estimate of the cost of making a survey of the lands occupied by such person, association, or corporation, and the cost of the clerical work necessary to be done in the office of the said United States marshal, ex officio surveyor general; and on the receipt of such estimates from the United States marshal, ex officio surveyor general, the said person, association, or corporation shall deposit the amount in a United States depository, as is required by section numbered 2401, Revised Statutes, relating to deposits for surveys.

That on the receipt by the United States marshal, ex officio surveyor general, of the said certificates of deposit, he shall employ a competent person to make such survey, under such rules and regulations as may be adopted by the Secretary of the Interior, who shall make his return of his field notes and maps to the office of the said United States marshal, ex officio surveyor general; and the said United States marshal, ex officio surveyor general, shall cause the said field notes and plats of such survey to be examined, and if correct approve the same, and shall transmit certified copies of such maps and plats to the office of the Commissioner of the General Land Office.

That when the said field notes and plats of said survey shall have been approved by the said Commissioner of the General Land Office he shall notify such person, association, or corporation, who shall then, within 6 months after such notice, pay to the said United States marshal, ex officio surveyor general, for such land, and patent shall issue for the same.

SEC. 14. That none of the provisions of the last 2 preceding sections of this act shall be so construed as to warrant sale of any lands belonging to the United States which shall contain coal or the precious metals, or any town site, or which shall be occupied by the United States for public purposes, or which shall be reserved for such purposes, or to which the natives of Alaska have prior rights by virtue of actual occupation, or which shall be selected by the United States Commissioner of Fish and Fisheries on the islands of Kodiak and Afognak for the purpose of establishing fish culture stations. And all tracts of land, not exceeding 640 acres in any 1 tract now occupied as missionary stations in said district of Alaska, are hereby excepted from the operation of the last 3 preceding sections of this act. No portion of the islands of the Pribilof group or the seal islands of Alaska shall be subject to sale under this act; and the United States reserves, and there shall be reserved in all patents issued under the provisions of the last 2 preceding sections, the right of the United States to regulate the taking of salmon and to do all things necessary to protect and prevent the destruction of salmon in all the waters of the lands granted frequented by salmon.

SEC. 15. That until otherwise provided by law the body of lands known as Annette islands, situated in Alexander archipelago, in southeastern Alaska, on the north side of Dixon's entrance, be, and the same is hereby, set apart as a reservation for the use of the Metlakatla Indians and those people known as Metlakatlans who have recently emigrated from British Columbia to Alaska, and such other Alaskan natives as may join them, to be held and used by them in common, under such rules and regulations and subject to such restrictions as may be proscribed from time to time by the Secretary of the Interior.

The principal officers in Alaska, appointed by President Harrison, are Lyman E. Knapp, governor; John S. Bugbee, judge of the United States district court; Orville T. Porter, marshal; Robert C. Rogers, William R. Hoyt, James Sheakley, and Louis H. Turpley, United States commissioners.